OCTOBER, 1927
MONTHLY No. 261

HITCHCOCK'S MACHINE TOOL BLUE BOOK

DIRECT MAIL ADVERTISING

to

Industrial Machine Shops
Automotive Plants
Railway Mechanical and
Purchasing Departments

AND ALL OTHER
MACHINE TOOL
USERS

Controlled Circulation
25,000 Monthly

Published By
HITCHCOCK PUBLISHING CO.
508 So. DEARBORN ST.
CHICAGO

Insure your motors for 5%

When you buy this motor you pay a 5% premium for ball-bearings. It is the cheapest insurance you can buy to make sure of these three things which have a direct connection to your pocket-book every day the motor runs.

(1) A better record for steady operation without production delays.

(2) A lower cost for maintenance.

(3) A longer life.

We shall be glad to submit detailed evidence that this insurance is worth many times its cost. The best evidence of all would be a Reliance Ball-bearing Motor in your plant.

Ball bearings have been used in Reliance Motors of one or more types for over 21 years

Reliance Electric & Engineering Co.
1050 Ivanhoe Road, Cleveland, Ohio

Branches: Boston; New York; Philadelphia; Pittsburgh; Cincinnati; Detroit; Buffalo; Chicago; Birmingham

RELIANCE A-C D-C MOTORS
with Ball Bearings

Direct-by-Mail Advertising

The Blue Book is co-operative direct-by-mail advertising, with all the efficiency and economy of co-operative effort.

Its monthly distribution of 25,000 copies covers all the better class of users and buyers of machine tools and shop equipment as completely as we have found it humanly possible.

When you are planning a direct-by-mail campaign, why not do it in co-operation with others, through the pages of the Blue Book, more effectively, more economically, and with far less effort?

Figure the amount of money you expect to put into a direct-by-mail campaign. If it will pay for only a half page in the Blue Book, that is good. If it will pay for a full page, or even a couple of pages, that is better.

But if your appropriation for direct-by-mail advertising will cover, say, four, or six, or eight, or a dozen pages in the Blue Book—sufficient to attract special attention and to tell your whole story—you can make your name and products familiar to potential buyers from coast to coast in 30 to 90 days.

This service—this great service—this most unusual service—is ready and waiting for you.

Won't you at least discuss it with us?

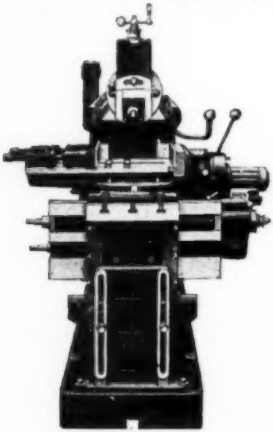
HITCHCOCK PUBLISHING CO.

508 So. Dearborn Street

CHICAGO, ILL.

New "American" Auto-Oiled Shaper

The WONDER SHAPER of today for Production, Range, Accuracy, Shop Economy, and Profit



16-Inch
Heavy Pattern

20-Inch
Standard Pattern

20-Inch
Heavy Pattern

24-Inch
Standard Pattern

24-Inch
Heavy Pattern

28-Inch
Standard Pattern

32-Inch
Standard Pattern

32-Inch
Extra Heavy Pattern

36-Inch
Heavy Pattern

Points of Excellence

Tremendous cutting power; unparalleled rigidity; permanent accuracy; automatic forced lubrication; multiple splined shafts; Timken roller bearings; multiple disc clutch and brake; V-type ram; improved table support; helical gears, alloy steel, hardened; tu-piece bull wheel; centralized control. Accessories and attachments for every conceivable kind of shaper operation.

You are interested in mechanical progress. Glad to post you on this great leader in shaper design, without obligating you in any way. Drop us a line.

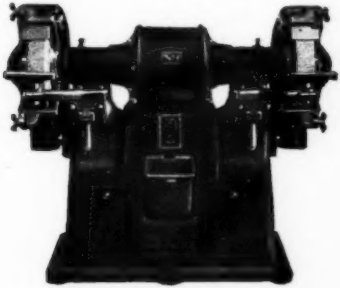
The American Tool Works Company

Cincinnati, Ohio, U. S. A.

LATHES RADIALS SHAPERS

Reserve Power
Overload Protection
Ball Bearings
Automatic Starter
Safety Wheel Guards
and long uninterrupted
Service

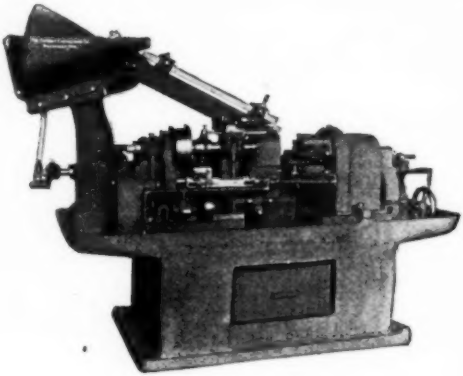
These are the reasons for the popularity of



HISEY
Electric Grinders

The Hisey-Wolf Machine Co.

Electric Drills, Grinders, and Buffers
CINCINNATI, OHIO
Represented in all Principal Cities



Economy Automatic Combined
Pointing and Threading Machines

REDUCE
BOLT COSTS

THE ECONOMY ENGINEERING

WHY ?

1st—One Man Runs Four Machines.

2nd—Machines Full Automatic—Eliminates Human Element.

3rd—Pointing Operation Free.

4th—Saves Handling From Pointer to Threader.

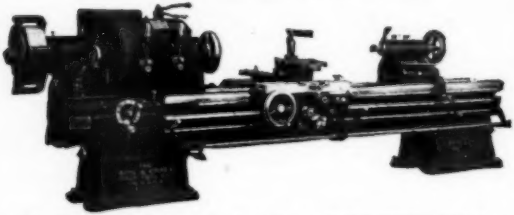
RESULT

Increased Profit for Manufacturer

COMPANY, - Willoughby, Ohio

Why Be Satisfied —

With Less Than the Best?



B. & E. 24" Engine Lathe—"CONELESS"

[TRADE MARK REG.]

Nothing better in a lathe is available for the range of work which our 24" Coneless will do. ***Quality*** and ***Convenience*** are its keynotes — and these always spell Economy.

The Lathe With the Longer Life

—such is the well-merited slogan which the B. & E. has earned. Here are a few reasons:

Twelve main spindle speeds, absolutely selective, with 13 gears that are always in mesh. ¶ Fool-proof gear arrangement, with gears always running in oil. ¶ Easy and efficient spindle control. ¶ Tailstock of cutaway type, permitting swiveling of compound rest parallel with the shears. ¶ Double plate apron of strongest possible construction. ¶ Finest materials and workmanship in every detail.

But these give only an inkling of its quality.
Why not write for the complete description?

SELLING AGENTS:

The Strong-Carlisle & Hammond Co.

1392 W. 3rd St., Cleveland, O. 1300 Fort St. W., Detroit, Mich.

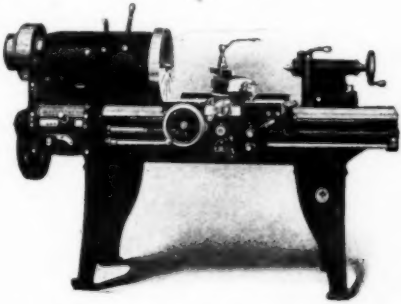
Niles-Bement-Pond Company

New York, 111 Broadway; Birmingham, 28 So. 20th St.; Boston, 76 Batterymarch St.; Chicago, 564 W. Monroe St.; Cincinnati, 338 West Fourth St.; Los Angeles, 454 East Third St.; Philadelphia, 2415 Chestnut St.; Pittsburgh, 1115 Empire Bldg.; Rochester, 89 East Av.; St. Louis, 1900 Washington Ave.; San Francisco, 917 Howard St.

The Boye & Emmes Machine Tool Co.

2245 Spring Grove Ave., Cincinnati, Ohio

LeBlond Heavy Duty LATHES



They embody the very latest developments and refinements in engine lathe design. While essentially heavy duty machines they embody operating convenience with accuracy that adapt them to the most exacting tool room requirements. They are built in a complete line of sizes, 13" to 36" swings with either cone driven or geared headstock, and are offered with the usual attachments.

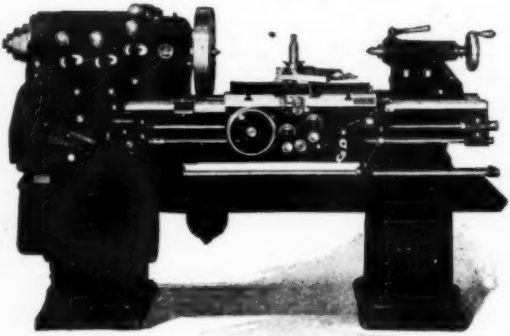
Write for our literature

THE R. K. LeBLOND MACHINE TOOL COMPANY

CINCINNATI, OHIO

Monarch Ball Bearing Helical Geared Head Lathe

Is giving wonderful service



About 90% of our orders are for Helical Geared Head Lathes, and about three-fourths of those are re-orders.

That means that Monarch Helical Geared Head Lathes are giving wonderful service. It means that if you once used them, you also would order again as you need new lathes.

WHY? Because they are noiseless, smooth running and powerful. Because they have developed spindle speeds never before obtained in geared head lathes. Because they increase production and do better work. Because of their many features for quick and easy manipulation. Because of their ultra-modern design and construction throughout.

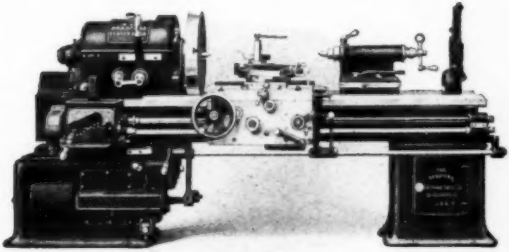
Made 14" to 30". May we tell you about them?

The Monarch Machine Tool Co.

Sidney, Ohio, U. S. A.

Accuracy and Production

Vary according to *Rigidity* in a Lathe



18" Single Pulley or Motor Drive, with Apron Control

Bradford "All Geared" Lathes

have the greatest amount of rigidity in operation that can be secured. This means that the Bradford can show the largest possible production of accurate work.

One exclusive feature that makes for the outstanding superiority of the Bradford is that the pressure at the cutting tool "per se" increases the binding force holding the head to the bed.

We can't begin to tell you here all that our 16-page ***"All Geared" Lathe Bulletin*** says, but we'll gladly send it to you.

A card will bring this instructive bulletin. Tell us of your needs in Engine, Precision or Turret Lathes. If we haven't what you need, we can make it.

The Bradford Machine Tool Co.

Builders of Quality Lathes from 14 to 48 inches

Cincinnati, Ohio, U. S. A.

Established 1840

PEASE
CHICAGO

THE PEASE PEERLESS

This equipment will save enough to pay for itself in a short time.

With the Pease Peerless you can get in one continuous operation up to 120 linear yards per hour of perfectly finished blueprints, printed, washed, potashed and dried, ready for immediate use at negligible cost per square foot. Yet the Pease Peerless will prove profitable for as short a run as from five to ten yards. Such economical production actually pays the original cost of the Pease Peerless and then pays dividends.

THE C. F.

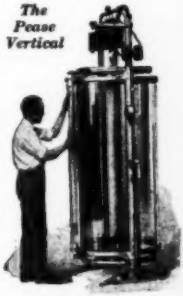
865 Nortl

Will It Pay Us To Make Our Own Blue-Prints?

Without a doubt! Because, if operated only a few hours each day, Pease Blue-Printing Equipment will pay for itself in a short time through low operating costs.

Another reason! Because—with the Pease Peerless, Pease Vertical, or Pease "Junior" Blue-Printing Machine, you can make perfect blue-prints in less time than required by other methods—delays are eliminated and errors are minimized, for every operation is under your own control at all times. Without obligation get the facts about Pease Blue-Printing Machines.

The Pease Vertical

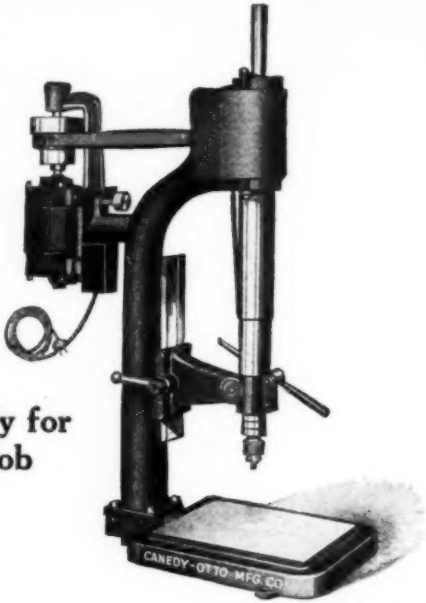


Made in five sizes to meet every blue-printing requirement except where continuous production is desired.

Ask for Catalog MP-65

PEASE COMPANY

Franklin St., Chicago, Ill.



Ready for the Job

Total height, 41".
Vertical adjustment of head, 7½".
Diameter of spindle, ⅝".
Travel of spindle, 3¼".
Maximum distance from bottom of chuck to base table, 10½".
Size of base table, 9½x12½".

Speed of spindle, 3,400-5600-10,000.
Largest size of drill, 5/16".
Distance from column to center of sp. 7¼".
Size of sp. pulley, 1½"-2¼-3"x1¼" face.
Bench space, 15x20".
Net weight, 180 pounds.
Crated weight, 220 pounds.

CANEDY-OTTO MANU

Factory and General Offices:

NEW YORK BRANCH:
407 Broome Street
NEW YORK CITY, NEW YORK

COMPLETE
CARRIED AT

FA
CHIC
STOC
BRAN

More Holes Per Hour

in all
ordinary metals
as well as wood and fibre

This drill is equipped with high grade ball bearings with ample provision for lubrication and all rotating units unusually well balanced, thus insuring continuous operation without vibration.

This is in every sense a high grade production tool, comes completely equipped, ready for the job, with motor, lamp cord, belt, toggle type switch and chuck.

The motor is attached in such a manner that it can be conveniently moved in and out, and firmly clamped in position, thereby giving the desired belt tension at all times. The table is oil grooved and is provided with a drain.

FACTURING COMPANY

CHICAGO HEIGHTS, ILL.

STOCK
BRANCHES

SAN FRANCISCO BRANCH:
955 Folsom Street
SAN FRANCISCO, CALIFORNIA

Demco Drills

Announcing

Demco-Bradford Unit Type Drilling and Tapping Head

Self-contained—motor driven—ball bearing, designed for one or more heads to be built into one unit at any angle from horizontal to vertical position. Rapid approach and return of spindle. Power take-off rod for clamping or locating work. Provisions for automatic indexing.

Demco Spindle automatically absorbs its own wear. Eliminates all lost motion—requires no adjustment.

No. 1	**Made in 2 sizes**	**No. 2**
¼ to ¾	**Drilling Capacity**	**¾ to ⅛**
¼ to ½	**Tapping**	**½ to 1**

Spindle Travel, 3" Spindle adjustment, 2". Speeds, 75 to 2000.

Write for complete description, or see Demco Dealers

Manufactured at the plant of

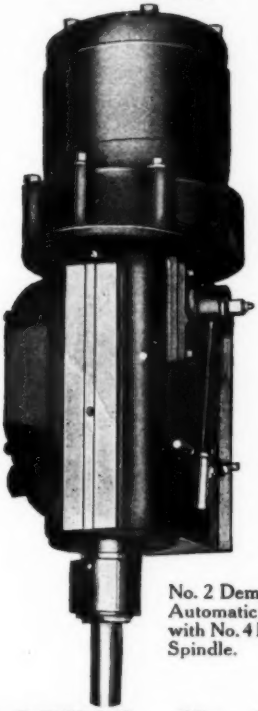
Bradford Machine Tool Co., Cincinnati, Ohio

DEMCO DRILLS—Cleveland, O.

Division of

Merit Oil Equipment Co., Cleveland, O.

Demco Drills



No. 2 Demco-Bradford Automatic Drill Head, with No. 4 Morse Taper Spindle.

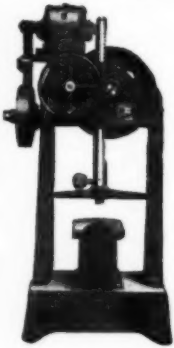
DEMCO DRILLS—Cleveland, O.

Division of

Merit Oil Equipment Co., Cleveland, O.

Mechanical Power is Cheaper than Human Muscular Energy

In the quick and easy operating



Lucas Power Forcing Press

The Belt Does the Work

and saves the workman's time and energy for other and better use.

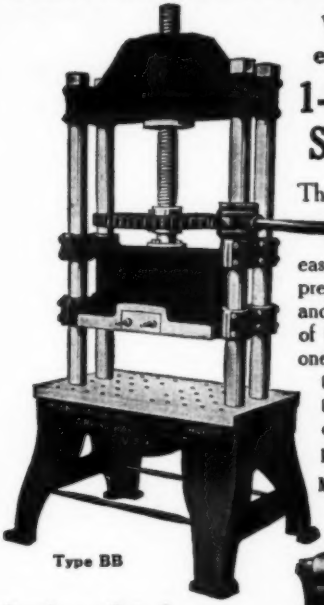
We also make the

LUCAS "PRECISION"
Horizontal Boring, Drilling and Milling Machine

The Lucas Machine Tool Co.

521 East 99th Street, Cleveland, Ohio

One Man Handles All Dies



Type BB

When you are equipped with a

1-Man 4-Post Screw Press

The perfect alignment between punch and die — the ease with which 80 tons pressure can be applied and the supreme rigidity of this machine, enable one man to do more, better and speedier work than two men can do on any other type of press.

Made in three smaller sizes

Surface Grinder

A substantially built machine that is powerful, rigid and accurate. Equipped with graduated dials and non-vibrating wheel.

Details and price on request

JARECKI MACHINE AND TOOL CO.

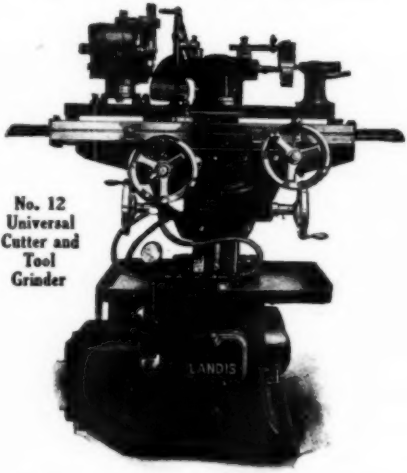
Department A

GRAND RAPIDS, MICHIGAN

Self-Contained

Cutter and Tool Grinders

With hydraulic table traverse



No. 12 Universal Cutter and Tool Grinder

Available either as a plain or universal machine. Will take care of any kind of cutter and tool work as well as light cylindrical grinding.

Superior finish results from use of hydraulic table traverse.

LANDIS TOOL COMPANY

Waynesboro, Pa.

New York Office: 2907 Singer Bldg. Detroit Office: 5928 Second Blvd.
Chicago Office: 618 W. Washington Blvd.
Philadelphia Office: 5143 Spruce St.

Grand Rapids UNIVERSAL Cutter & Tool Grinders

With Self-Contained Motor Drive

Motor Driven No. 3, with Guards in Place

Our Nos. 3 & 4 Universal Cutter and Tool Grinders are superlatively high-grade machines.

Furnished **either** hand or power feed, wet or dry, motor or belt drive.

Our Nos. 1 & 2 are smaller sizes.

GRAND RAPIDS Universal Cutter and Tool Grinders Nos. 3 and 4 are duplicates excepting in the length of table and the longitudinal movement. They are superlatively high grade, designed for those who want the economy of the best. For detailed description write for the Bulletin.

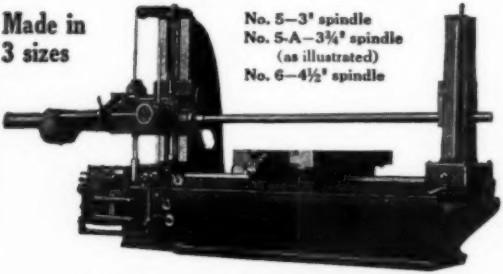
WE HAVE FOUR separate illustrated descriptive Grinder Bulletins, covering *"Universal Cutter and Tool Grinders Nos. 3 and 4"*, *"Universal Cutter and Tool Grinders Nos. 1 and 2,"* *"Grand Rapids Drill Grinders,"* and *"Grand Rapids Tap Grinders."* We suggest that you write today for the Bulletin or Bulletins in which you may be interested.

Gallmeyer & Livingston Co.

342 Straight Ave., S. W., GRAND RAPIDS, MICH.

Defiance No. 5-A Horizontal Boring, Milling, Drilling and Tapping Machine

Made in 3 sizes



No. 5—3" spindle
No. 5-A—3¾" spindle
(as illustrated)
No. 6—4½" spindle

For More and Better Work

Defiance Machines are made to meet every requirement of machine tool users. They have an abundance of power and an ease of manipulation which insures speedy and and accurate production in both single and manufacturing operations.

Speed, power and precision are obtained by simplified design and unusual accessibility which are but two of the many special features which add much to their dependability under continued hard usage and their ability to do more and better work.

Write for the descriptive folder, or for the complete Catalog of "The Defiance Line" of Cylinder Boring Machines, Heavy Service Drilling Machines, Rail Drills, Horizontal and Vertical Multiple Drilling Machines, Multiple Tapping Machines and Valve Grinding Machines.

The Defiance Machine Works

Defiance, Ohio

Designers and Builders of Precision-Production Machine Tools and Special Woodworking Machinery

Rickert-Shafer Automatic

Single Purpose Threading Machine

ACCURATE
DEPENDABLE
FLEXIBLE
ECONOMICAL

These are a few of the reasons for giving R-S Threading Machines particular consideration.

The R-S Machine is practically the only automatic threader which will maintain the accuracy demanded by automobile manufacturers. Roller bearings are used for the spindle sleeve; bronze for other vital bearings; individual motor drive, built-in pump for circulating coolant and generous sized reservoir for holding same.

It can be adapted to almost every job of threading—from the simplest to the most complicated. Combination tools supplied so that chamfering, reaming, facing, etc., can be done simultaneously with the threading and with one chucking.

This R-S is backed by a company whose personnel comprises men who have specialized on thread cutting only for the past 35 years. They KNOW HOW to produce threading equipment which will give you REAL SERVICE.

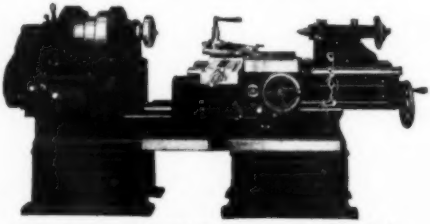
Write us for complete information

RICKERT-SHAFER CO., Erie, Penna.

A Lathe For Every Job

Without Tearing Down and Setting Up

It enables the operator at all times to have a lathe ready for practically any job.



Rahn-Larmon 18"/36"x8' Extension Bed Gap Lathe

Price $1,725.00 F. O. B. Cincinnati, Ohio

This Gap Lathe will give you the following dimensions:

Takes between Centers (gap closed) 5 ft.
Takes between Centers (gap open) 7 ft. 6 in.
Width of Gap 2 ft. 6 in.

Not only is it always ready for practically every job, but it is a real lathe on all of them. It is so sturdy in construction that it absorbs the vibrations of the heaviest cuts.

It reduces to a minimum the amount of equipment required, as well as setting-up time and operating time, in jobbing shops, railroad shops, or wherever there is a variety of work to be done.

It saves in investment cost, saves in time and labor cost, and increases output—a combination we are all looking for and one we are fortunate to find.

The Rahn-Larmon Company

Cincinnati, Ohio

It Specializes

On Light Shaping and Slotting

7 in. Shaper Stroke

3½ in. Slotter Stroke

The Rhodes Shaper and Slotter

THIS IS THE DAY of specialization—and greater economy. It doesn't pay to use a big shaper on your dies, tools, models, and other light shaping and slotting, when it can be done with greater facility and economy on a machine that is built especially for that purpose.

THE "RHODES" is a quality tool, built for rapid and accurate production. Quickly changed from shaper to slotter, and vice versa, without resetting the work.

Ask your dealer or write for
CATALOG H22

The Rhodes Mfg. Company
944 Park Road, -:- Hartford, Conn.

SHAPERS—RHODES—SLOTTERS

Avey

Get this book before you do your 1927 tooling

—if not already using Avey Drilling Machines

Among the 20 sizes and types of Avey Drilling Machines you will find just the machine you want. Each is supreme in its class, backed by our absolute guarantee.

All-ball-bearing, automatic, semi-automatic or hand-operated—1 to 6 spindles—there's an Avey for every class of work and size of hole.

The Avey Drilling Machine Co.
Cincinnati, Ohio

FOOTBURT

A Single Spindle Footburt Sipp Sensitive Drill

Made in three sizes of single and multiple spindle models

More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.

FOOTBURT

BARNES

Adjustable Arbor Presses

SAVE TIME

The cross head can be instantly dropped to the work, locked in position, and with a few turns of the center screw (ratchet operated) the required pressure can be applied.

Made in three sizes—the largest admits 36 inches between screws and has a capacity of 50 tons pressure.

Write for full information

Established 1872

W. F. and John Barnes Co.

Rockford, Illinois

Threading at 3000 R. P. M.

These rods are being threaded with a No. 8-32 thread 5-16" long, at an average production of 1400 pieces per hour on our Standard High Speed Tapping Machine.

How about your threaded work?

Leland-Gifford Company, - Worcester, Mass., U.S.A.

BRANCHES

BOSTON CHICAGO CLEVELAND
DETROIT NEW YORK
PITTSBURGH ROCHESTER

AGENTS

Hendrie & Bolthoff — Denver
F. E. Satterlee Company — Minneapolis
Colcord-Wright Mchy. & Supply Co. — St Louis
Herberts Machinery & Supply Co. — Los Angeles, San Francisco
F. F. Barber Machinery Co. — Toronto

LELAND-GIFFORD

Taylor & Fenn Belt Driven

No. 12 Spring Press

UNIFORM BLOW SPRING PRESSES

Are made in three sizes, with either single or double action

Our No. 12 Belt Driven Spring Press, illustrated above, has a stroke of 3¼ inches. The foot treadle operates a safety clutch attached to the flywheel, which automatically stops the machnie after each stroke regardless of whether the treadle is released or held down by the operator. The clutch can be adjusted for a continuous stroke if desired.

Descriptive circular gladly sent upon request

The Taylor & Fenn Co.

Hartford, Conn., U. S. A.

Profit 3-ways

Edlund Sensitive Single and Multiple Spindle Drills are made in styles and sizes to fit varied requirements. Each by its wide range, long service and great accuracy insures profit from three channels. This—

Edlund Sensitive Drill

No. 2B Column Type is no exception. It is equipped by special methods of power transmission—vibration elimination — friction minimizing and unfailing accuracy to—

Lower the Whole Cost—

Why? Because 3 speed changes can be made in a fraction of a second without stopping machine—because a special belt shifter allows shifting the belt from either side, because it trips with such accuracy that any number of blind holes may be bored without .004" variation in depth, and because full ball bearing equipment and perfected construction give a smooth, clean cut.

Edlund Mchy. Co., Inc.
CORTLAND, NEW YORK

Put your problems up to us.

REMEMBER— Edlund for drilling economy.

Finish Your

Flat Work

on a

Peerless Surfacing Machine

Ball Bearings Throughout

PEERLESS SURFACING MACHINE CO., Inc.
TROY, N. Y.

Townsend Disc Grinders

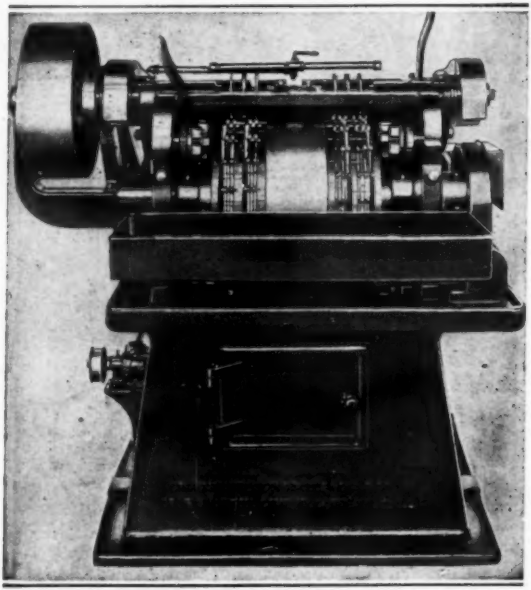
18"	$250.00
24"	325.00

Charlestown Machine Co.

67 Walnut St., Fitchburg, Mass.

The Craftsman Continuous Rotary Miller

Made in Three Sizes—No. 1, No. 2 and No. 3



For Castellating—Screw Slotting—Slab Milling Straddle Milling—Plain Milling, Etc.

Let us have your blue-prints or samples of small parts to be milled, and we will be pleased to submit production rates.

Manufactured by

The Sommer & Adams Company

18511 Euclid Ave., Cleveland, Ohio

Full Automatic

Pointing, Champfering, and Drilling Machines

with hopper feed

Hoppers

for Centreless Grinders

Threaders—Sletters—
Drillers—
Bar Pointers—

A Symbol of Quality on Any Machine

Cap Screw Pointers
and Shavers—Tappers—
Tool Grinders.

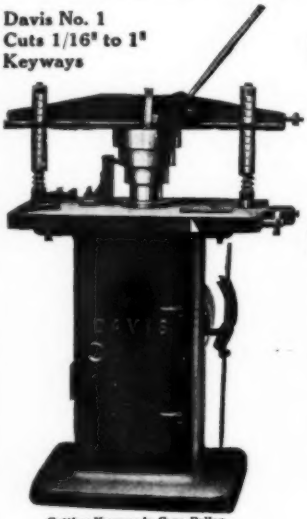
The KENT MACHINE COMPANY

CUYAHOGA FALLS, OHIO

Rapid Keyseating—

In Quantity or in Small Lots

Davis No. 1
Cuts 1/16" to 1"
Keyways



Cutting Keyway in Cone Pulley

THE DAVIS

has the speed for economical production of standard parts.

THE DAVIS

can be set up quickly in the general shop for all sizes of keyways within its capacity.

The Davis is simply constructed, is difficult to get out of order, and is easy to adjust and operate. It is a rapid and economical producer of accurate keyways under all conditions.

Write for folder, which describes it fully, with a table of cutting time that tells its own story.

Davis Keyseater Company

255½ Mill St., Rochester, N. Y., U. S. A.

Lower Your Keyseating Costs

With the NEW Catlin No. 1

Rapid
Simple
Durable
Efficient
Accurate
Economical

The Catlin Keyseaters are popular because they are profitable—they have made good in machine shops of every size, as well as automobile plants, government shops, navy yards and many foreign factories.

Nos. 0, 1 and 8 Keyseaters have the crank motion, while all other sizes have the rack and pinion drive. All Catlins are thoroughly efficient, and help to lower shop costs. The picture shows our No. 1 Keyseater.

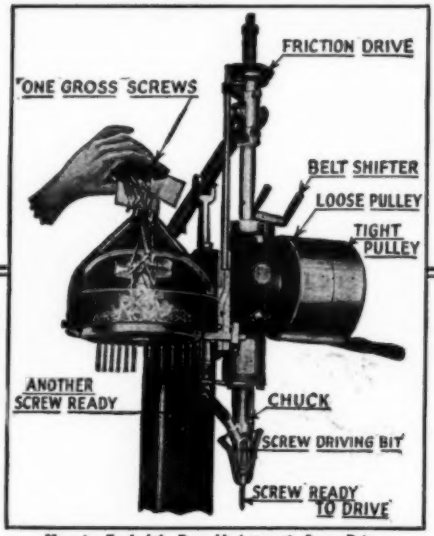
Let us send you the large folder, which gives full details of construction and operation, and also some

Very Interesting Production Records!

Chattanooga Machinery Company

2401 Bennett Ave., CHATTANOOGA, TENN.

Lowest Cost Screw Driving



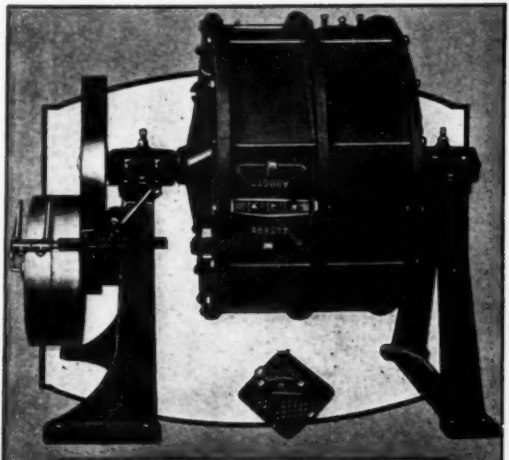
Magazine Feed of the Reynolds Automatic Screw Driver

THE MAGAZINE FEED does all the handling of screws. All the operator has to do is to pour a gross or more of screws into the hopper, handle work with both hands, and press a foot lever. RESULT:—a boy or girl easily drives 800 to 1,200 screws an hour and an experienced operator up to 2,000.

There's a "Reynolds" for your work. Tell us, please, its dimensions over all, with length and gauge of screws used, and let us place our proposition before you.

The Reynolds Machine Company

Dept. H.H. **Massillon, Ohio**



When Sales Hang In The Balance—

THEN looks count. All other things may be equal but the uniformity and quality of the finish is a deciding factor. Abbott Burnishing Barrels provide this all-important finish for leading manufacturers.

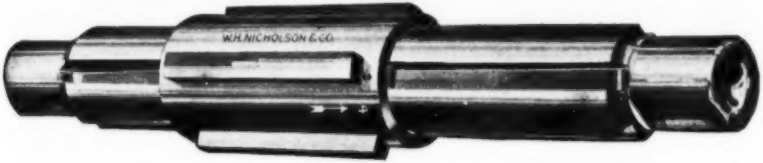
One man operating an Abbott Barrel can equal the average daily production of eight hand finishers. Let us tell you the story in detail.

Samples Finished Without Obligation To You

THE ABBOTT BALL COMPANY

"Originators of Commercial Ball Burnishing"

1043 New Britain Ave., Hartford, Conn.



Jobs with bores ranging in sizes from ½" to 7" are taken by 14 of these mandrels. They are sold either singly or in sets.

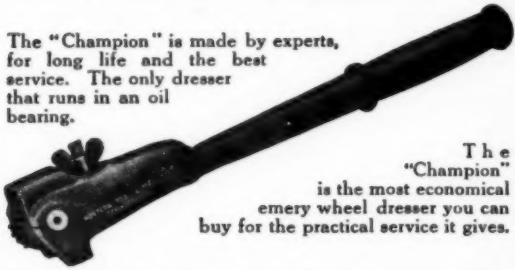
Write us for further information

W. H. Nicholson & Co., 117 Oregon St., Wilkes-Barre, Pa.

"Champion" Emery Wheel Dresser

Outlasts a Dozen Cheaper Dressers

The "Champion" is made by experts, for long life and the best service. The only dresser that runs in an oil bearing.



The "Champion" is the most economical emery wheel dresser you can buy for the practical service it gives.

The ***cutters*** are made of a special steel, heat-treated and tempered by a special process.

The ***sleeve,*** furnished with each set of cutters, revolves on the spindle and the cutters in turn revolve on it, providing a more perfect bearing for the cutter wheels.

The patented ***spindle bearing,*** which is made of steel and thoroughly hardened, serves as a bearing for spindle and a guide for cutting wheels, and it cannot turn in the handle; makes wobbling impossible.

The patented ***handle*** is heavy and strong, designed for long service, efficiency and economy.

The patented ***handle cap*** eliminates the old-fashioned set screw and serves as an upper-clamp for spindle bearing. Further, there are no moving parts. On account of absence of wear, the life of handle and handle cap is indefinite.

Our Catalog also describes

Champion Tool Holders, Champion Expanding Mandrels, Machinists' Vises and Clamps, etc., and our large line of practical, hard-to-beat Shop Furniture. Copy upon request.

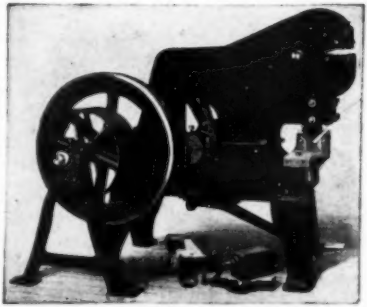
The Western Tool & Mfg. Co.

SPRINGFIELD, OHIO

Punches—Shears—Bending Rolls

The Beloit

Combined Power Punch and Shear



Built in seven sizes. Nos. 51, 52, 53, 54, 55, 55½ and 56

Direct connected motor or belt drive

This is the best all around punch and shear in a combined machine of moderate cost. It is heavy and substantial, and amply back geared to require the minimum amount of power; is strong, compact, and easy to operate. Can be equipped with angle shearing attachment, architectural jaw, or for special work.

We make a complete line of punching and shearing machinery in both power and hand tools, also light and heavy duty bending rolls.

We do not overrate the capacity of our machines.

Write for catalog and prices.

Hendley & Whittemore Co.

100 S. State St., Beloit, Wis.

No. 5 Jr. Punch

ORIGINATORS WORLD'S LARGEST BALL BEARING PUNCH AND SHEAR MANUFACTURERS

LIGHT and STRONG

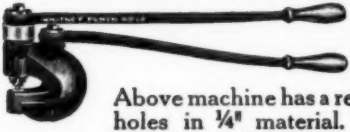
Will punch ¼ in. hole through No. 16 gauge iron or its equivalent. Weight 2½ lbs.

No. 8 Imperial Punch

Weight, 16 lbs.; capacity ¼" through ¼" iron.

Operating Handles will not become disengaged. Roller Bearing. No cams to wear out. Drop Forged. All wearing parts hardened.

Ball Bearing Punch No. 10



Capacity, ⅜" hole through ¼" iron. Weight, 8½ lbs.

Above machine has a record of 100,000 holes in ¼" material. Will rivet as well as punch holes.

Write for Catalog and Price List on Entire Line

WHITNEY METAL TOOL CO.

95 Forbes Street, Rockford, Illinois

STOP Throwing Away

Hack, HARD TEMPERED METAL CUTTING Band Saws

MILLING, SLITTING AND SCREW SLOTTING SAWS

Saws even with teeth as small as 32 to 1" salvaged

SEND TO US
by mail two saws and
we will resharpen them

FREE OF CHARGE
that you may see the
work our machines do

REDUCE
PURCHASES
SAVE MONEY

IT COSTS **5¢** *To Sharpen A Band or Circular*

IT COSTS **2¢** *To Sharpen A Hack Saw*

Write for Catalog

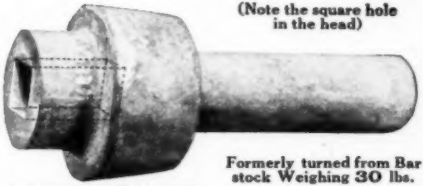
THE WARDWELL MFG. CO.

Makers of automatic machines for sharpening—Hack Saws, Hard Tempered Band Saws, Milling, Slitting and Screw Slotting Saws and all Woodworking Saws

Manufacturers of the largest line of Saw Filers made in U. S. A.

108 Hamilton Ave., CLEVELAND, OHIO

Have You A Problem Like This?



AmForge—Upset, Weight 12 lbs.

This piece was formerly turned from bar stock, the 1¼" square hole being machined in the end at a greater expense.

Our customer changed his specifications to "AMFORGE" and now gets his forgings as shown above. The square hole is ***accurate***—fits customer's gauge—and ***no machining is required.*** On the balance of the forging there is 3/32" allowed for finish.

He saved 18 lbs. on each piece and reduced his machining to 1/3 of the former cost.

Send for our booklet

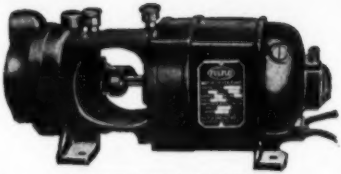
American Forge Co.

2635 So. Hoyne Ave., Chicago, Ill.

GRINDER PUMP

FULFLO

VOLUME PUMPS



MOTOR DRIVEN UNITS
⅛ to 5 H. P. 5 to 75 G. P. M.

FULFLO delivers coolant in volumes which promotes efficiency in cutting tools.

The full, copious flow from the Fulflo is needed to make the best tool, with the best coolant, most effective.

FULFLO does not clog, therefore it always works. It's the trouble proof pump.

No machines stopped to unclog pump. All the chips you can get into it pass through without harm.

FULFLO has longest life because its only pumping part does not wear.

MANUFACTURED BY

FULFLO SPECIALTIES CO., BLANCHESTER, OHIO

Increase Production, Decrease Costs!

3
Sizes

Accuracy — precision —dependability—these are the factors that determine the selection of spot welders in the automotive industry. But they are not the only reasons why so many automotive concerns inevitably come to Taylor-Winfield—increased production and reduced operating costs are other decided advantages of Taylor-Winfield Spot Welders.

The latest type illustrated, Type N, is already the leading continuous service spot-welding machine of the industry, with water-cooled transformer, automatic switch, adjustable horns, 8-step regulator, etc., built for steady twenty-four-hour duty!

Write for details on complete Taylor-Winfield line

THE TAYLOR-WINFIELD CORP.
WARREN, OHIO

TAYLOR-WINFIELD WELDERS

Spot, Butt, Seam or Portable

DANLY Die Sets

and die makers' accessories

Carried in stock, at all Danly warehouses, 14 types and 113 sizes of Danly die sets . . completely assembled, ready for immediate use.

You can order from the Danly Catalogue, as easily as writing out a requisition on your own stock room.

Also carried in stock, dowel pins, leader pins and bushings, pry bars, clamps, cap and set screws, pressure pad, knockout and stripper plate springs; laps; stripper bolts . . . complete line of die makers' accessories.

Send for your copy of the new catalogue, now being printed. This is invaluable and indispensible. No obligation.

Danly Machine Specialties, Inc.

2116 So. 52nd Ave., Chicago, Ill.

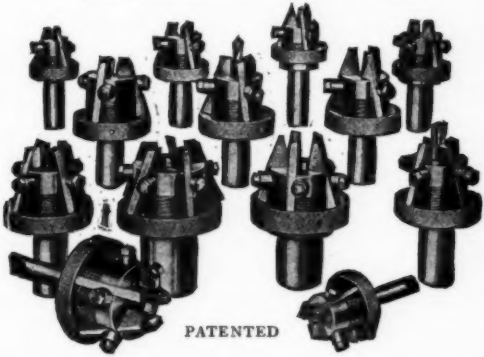
Long Island City, N. Y.
35 Wilbur Ave.

DANLY STANDARD

Detroit, Mich.
1537 Temple Ave.

A Saving Hint for You

"Use Genesee Hollow Mills!"



PATENTED

THEY SAVE—Because the seven sizes cover the entire range from ⅛" to 2", which ordinarily requires hundreds of solid tools;—because one set of blades outlasts three to five solid tools, and can then be replaced at small cost.

THEY SAVE— Because they are ideal for finishing castings, forgings, etc., and more economical than non-adjustable mills for every purpose. Genesees cut up to 15" a minute in steel. They are stronger than solid tools, and as they cannot change in size, they are thoroughly dependable.

NOW MADE in six different styles, from the heavy roughing Style "B" to the accurate finishing Style "F." We also make Style "N" Mills for all Brown & Sharpe automatics, and special size and style to your order. You will find them all real cost reducers.

Equip your shop right—write us about your needs

Genesee Manufacturing Co., Inc.

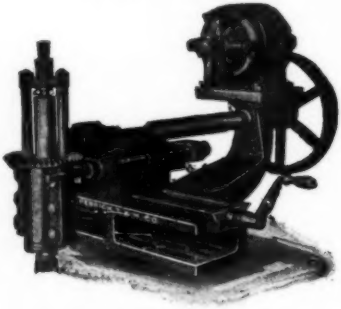
141 North Water Street, Rochester, N. Y.

Manufacturers of Genesee Rapid Production Tools. ***Est. 1908***

Without a **Pedrick**

Portable Milling Machine

You Often Pay Its Price
In Delay On One Job



To appreciate its value just add the savings you could effect in a year by taking this handy, ever-ready tool to the job instead of bringing the job to the tool, then subtract the price. Result—net earning power.

You need this Pedrick Miller to do those big jobs that your standard machines cannot handle.

Catalogue explains all its various operations—
a comprehensive book of reference and key
to manifold savings. Your copy is waiting—
shall we send it now?

Pedrick Tool & Machine Co.

Headquarters for Portable Machine Tools
Boring Bars, Crank Pin Turners, Pipe Benders, etc.

3644 N. Lawrence St., Philadelphia, Pa.

Strand

New Type Machine
For
Rotary Filing Grinding and Polishing

Type RF-M 4. ¼ H. P.

For
Die Makers
And
All Kinds of Metal Finishing
Of
Various Shapes and Sizes
A Machine—
For
Many Purposes

Attach to the Lighting Circuit

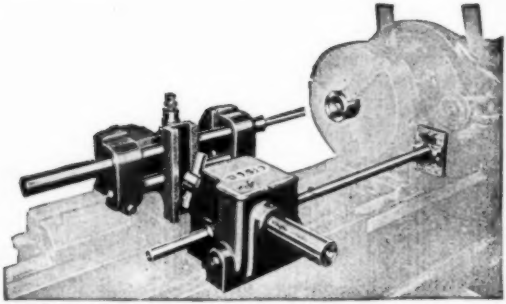
Attachments

EQUIPMENT

Ball Bearing Hand Piece.
8 Assorted Rotary Files.
9 Assorted Grinding Wheels.
1 Rubber Polishing Drum.

Machine Complete as Illustrated

N. A. STRAND & CO.
Manufacturers
5001 No. Lincoln Street
CHICAGO



How Do You Oil Groove Bearings?

Are you still using the old method of chipping oil grooves? The ***Cisco Universal Lathe Oil Grooving Attachment*** was designed to relieve manufacturers of the costly operation of chipping oil grooves. It is readily attachable to any make of lathe from 14" to 24" inclusive.

This attachment cuts single, double, triple, or quadruple oil grooves of the figure eight type, inside or outside the bearing. The depth of the groove is controlled by the operator. The diameter of the work, ranges from 5/8" to the maximum capacity of the lathe used. Made in three maximum lengths of 6", 9", or 12", the variety of work that can be oil grooved is very great.

Wherever installed, the attachment will pay for itself by the increase in production, and the time saved. Upon receipt of your request, we will be glad to send you bulletin and explain this attachment in more detail.

The Cisco Machine Tool Co.

1700 Elmore Street, Cincinnati, Ohio

MARTINDALE MOTOR Maintenance EQUIPMENT

Imperial Commutator Stones

Grind your own commutators by hand.

Made in proper grades for cutting and finishing Commutators and Slip Rings—also New No. 7 grade for Glazing Commutators and Slip Rings.

MARTINDALE ELECTRIC CO.

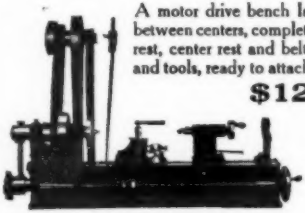
1264 West 4th St., Cleveland, Ohio

Please send literature on Imperial Commutator Stones and New No. 7 Glazing Stones to—

10-27

Just-Rite Lathes

Made in Sizes from 10-in. to 20-in.



A motor drive bench lathe, 10" swing, 24" between centers, complete with motor, swivel-rest, center rest and belting, including chuck and tools, ready to attach to your light socket.

$125

JUST-RITE for turning, boring, milling and drilling (not screw cutting.)

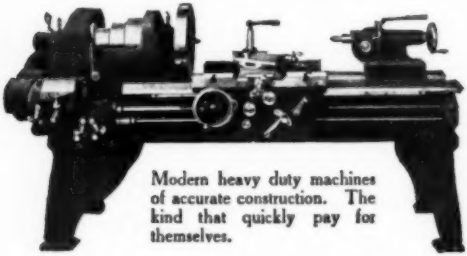
Has Power Feed

Order one by express. Weight, 230 lbs.

A. V. Carroll Machine Tool Co., Norwood, Cincinnati, O.

HAMILTON Rapid Production

Lathes—Planers—Vertical Drills



Modern heavy duty machines of accurate construction. The kind that quickly pay for themselves.

Write us regarding your needs

The Hamilton Tool Company, Hamilton, Ohio

Live Agents Wanted In Open Territory

HARDINGE

CATARACT LINE

Embodying an experience of nearly forty years, the superior design, accuracy and workmanship of Hardinge Lathes guarantee augmented production. *Catalog on request.*

Hardinge Brothers Inc.
4149 Ravenswood Ave. Chicago Ill.

NOTICE

To Users of I. H. JOHNSON

Engine Lathes

We have purchased the patterns and tools used in building JOHNSON Lathes, and are prepared to furnish repair parts and attachments for these machines.

The Carroll Jamieson Machine Tool Co.
BATAVIA, OHIO

MG

MASSACHUSETTS GEARS
MAKE GOOD

ALL TYPES:
Spurs, Internals, Bevels, Mitres, Helicals, Spirals, Worms, Worm Gears, Sprockets, Ratchets.

ANY MATERIAL:
Steel, Cast Iron, Brass, Bronze, Aluminum, Fibre, Bakelite, Rawhide.

Made in small and Medium Sizes, all of One Quality—the very best. We also carry a full line of Stock Gears for immediate delivery. *Write us.*

Massachusetts Gear & Tool Co.
36 Nashua St., Woburn, Mass.

IXL GEARS

All Sizes and Types for Every Requirement

send for 660 Page Catalog "Gear Problems"

FOOTE BROS. GEAR & MACHINE CO.
229 N. Curtis St., Chicago

your "special" Problem may be a Standard one with us

over 60,000 different patterns

OLIVER OF ADRIAN

Die Making Machines

save an average of 50%

Dies, templets, experimental parts, gages and the like can be sawed, filed and lapped on the Oliver of Adrian Die Making Machine much easier, more accurately and in a fraction of the time ordinarily required for handwork.

We also manufacture a line of

Point Thinners.

Drillpointers.

Profilers.

Send for Bulletins

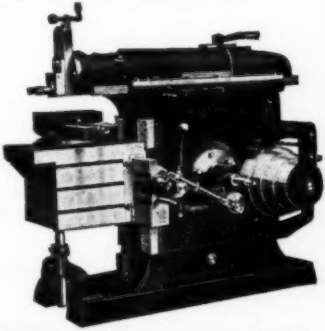
Oliver Instrument Company, 1408 Maumee St., ADRIAN, MICH.

SHAPERS

12", 14", 16" Plain Crank, 16", 20", 25" B. G. Crank, either Cone Driven or through Speed Box.

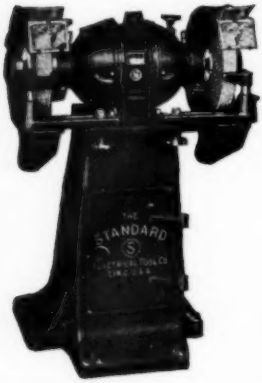
Belt Shifter Regular Equipment All Cone Driven Shapers.

32" Back Geared Crank, Single Pulley Drive.



The Smith & Mills Co., Cincinnati, O., U.S.A.

Standard Ball Bearing Grinders



Made in sizes from ¼ H.P. up to 10 H.P.

Tool Post Grinders
¼ to 2 H. P.

Polishing and Buffing Lathes
¼ to 15 H. P.

Aerial or Hand Grinders
¼ to 3 H. P.

Bench Grinders and Buffers
¼ to 2 H. P.

Drills—¼" to 1½".

Send for Catalog

The Standard Electrical Tool Co.

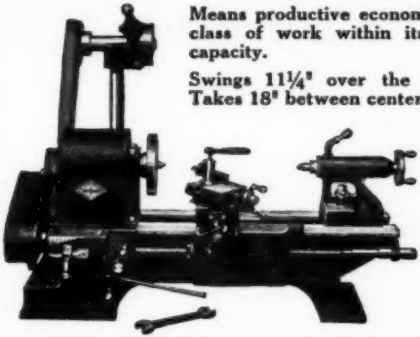
1948 W. 8th St.,
CINCINNATI, OHIO

Mall high speed cover base terrazzo grinding machine.

Makers of the largest assortment of flexible shaft machines

Mall Tool Company, 7728 So. Chicago Ave., CHICAGO, ILL.

The "ARTISAN" 11"x3' Bench Lathe!



Means productive economy on any class of work within its unusual capacity.

Swings 11¼" over the ways—Takes 18" between centers.

Write Today for Full Details and Price.

Artisan Manufacturing Company

837 Hathaway Street, Cincinnati, Ohio

E-Z THREAD DIAL

Thread cutting on engine lathes made easy, and at lower cost.

Can be easily attached to all size lathes.

A reliable device that will aid the operator in the work of cutting threads.

With it threads can be cut close up to shoulders as easily as the ordinary thread.

Eliminates stopping or reversing the lathe.

Does not require a backing belt.

The many repeat orders received prove it is satisfactory after trial.

A large corporation ordered thirteen, at one time.

Another nine and another five.

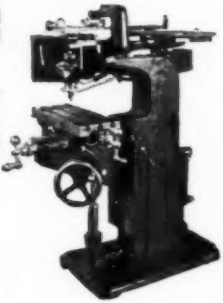
Sent on thirty days' trial.

Send for folder today.

JAMES M. COLVEN, 20 Wolffe Street, Yonkers, N. Y.

Universal Die Sinking and Engraving Machines

designed to save time and money on the production of light and heavy dies, molds, stamps and general engraved work—



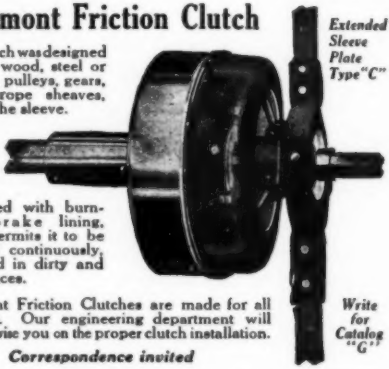
in brass, steel or cast iron. Built by a firm having over thirty years of experience, having equipped many prominent work-shops.

Catalog sent on request

George Gorton Machine Co.
Racine, Wisconsin

Edgemont Friction Clutch

This clutch was designed to drive wood, steel or cast iron pulleys, gears, drums, rope sheaves, etc., on the sleeve.



Extended Sleeve Plate Type "C"

It is lined with burn-proof brake lining, which permits it to be operated continuously, and used in dirty and dusty places.

Edgemont Friction Clutches are made for all purposes. Our engineering department will gladly advise you on the proper clutch installation.

Correspondence invited

Write for Catalog "G"

Edgemont Machine Co., Inc., DAYTON, OHIO

Equip with

BRIDGEBILT
Factory Seating

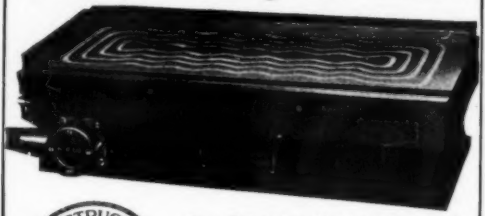
Adjustable for comfort—steel for long life

Select the chairs and stools for your factory from this line. They will meet your particular needs and stand up under any wear you give them.

Write for prices and illustrated folder

The Chicago Wire Chair Co.
616 No. LaSalle St., Chicago, Ill.

"D & W" Flat & Rotary Magnetic Chucks



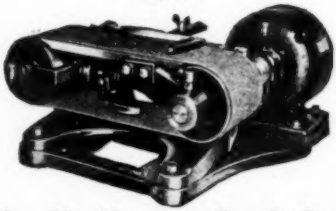
INDESTRUCTIBLE D&W MAGNETIC CHUCKS REG. U.S. PAT. OFF.

Our Extensive Line covers a wide range. They save time and cut costs holding iron and steel pieces. Glad to investigate and report on any problem you may have in connection with the use of Flat and Rotary Magnetic Chucks. Address

J. & H. Electric Co.
159 Clifford St., Providence, R. I.

Abolish Expensive Hand Finishing

with a



Simplex-M Abrasive Band Grinder

This Grinder accelerates production and cuts costs. Hand emerying or filing operations are antiquated in comparison. The use of this new modern machine assures straight grain finishes with sharp edges. *Details of this and other styles and sizes on request.*

WALLS SALES CORP., 96 Warren Street NEW YORK

Getting Light on the Subject

is EASY with an AUTEX Extension Reel

It goes wherever you want or need it. Saves time and eyes, speeds up work and quickly pays for itself. Indispensable during the winter months.

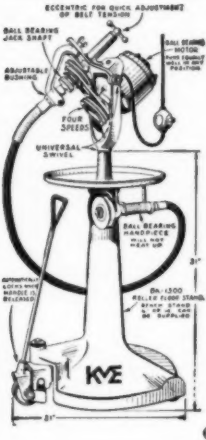
ORDER NOW!

Approved by the Underwriters

Now equipped with Belden Rubber Cord

Write for descriptive circular and the low price

The Cincinnati Specialty Mfg. Co., Inc.
1903 Powers St., Cincinnati, Ohio



Keller "BK"

"The Machine of a Hundred Uses"

¼ — ⅓ — ½ — H. P.
SPEEDS UP TO 10,500

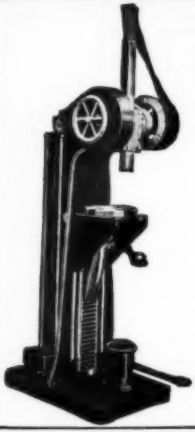
Non-Heating Shafts
Ball Bearing Handpieces

FILING— GRINDING—
POLISHING—DRILLING—
ETC.

Tell us your problems

Keller Mech. Engineering Corp.,
58A Washington St., Brooklyn, N. Y.

(See Page 66)



Atlas Arbor Presses

For All Forcing Operations

Illustration shows our No. 55 Power Drive Press, which is adaptable for fast production work and capable of supplying ten tons pressure.

Write for our Bulletin—showing 30 different sizes

Atlas Press Co.

Department B,

Kalamazoo, Michigan

A BIAX Flexible Shaft Equipment

Is a Portable Workshop

Fitted for a wide variety of operations for which an extensive range of tools can be supplied.

Uses of Biax include:

Drilling, Boring, Grinding, Polishing, Screw setting, Cleaning Castings, Finishing, Sanding, etc.

Biax Flexible Shaft Company

136 Liberty Street, NEW YORK CITY

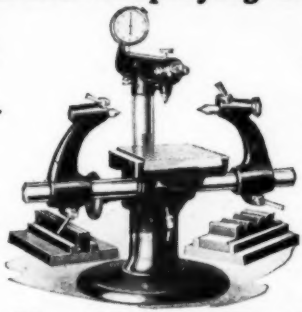
Mid-West Distributor—Tachometer Division Elgin National Watch Co., Chicago, Illinois.

Pacific Coast Distributor: Machinists Tool & Supply Co., Los Angeles, Calif.

North Side Amplifying Gauges

Speedy

Accurate



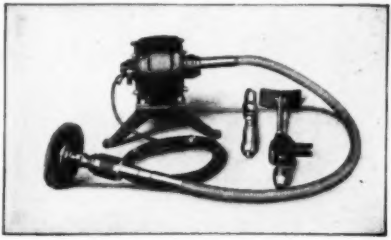
Saves Spoiled Parts

Reads to $\frac{1}{10,000}$

The North Side Tool Co.
DAYTON, OHIO

The Whirlwind Buffer and Grinder

Will cut the cost on any unhandy grinding or polishing job



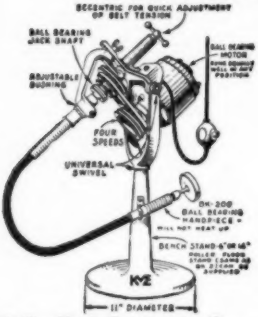
Send for our latest bulletin

Stow Flexible Shaft Co., 3454 Ludlow St., Philadelphia, Pa.

The Best Since 1876

Keller "BK" Flexible Shaft Grinder

"The Machine of 100 Uses"



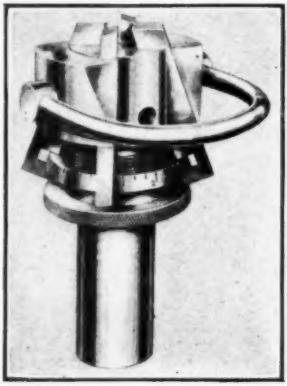
¼—⅓— ½H. P.
Speeds up to 10,500

COMPLETE LINE OF ACCESSORIES

Rotary Files—
Emery Wheels—Sanding Drums—
Wire Brushes, Etc.

Keller Mech. Engineering Corp., 58A Washington St., **Brooklyn, N.Y.**

(See Page 63)



REISINGER
Adjustable
Hollow Mills

No wrenches are required.

Micrometer adjustment of blades either way.

Interchangeable shanks.

Six sizes only are required for capacities from 1/16" to 2½".

Will cut your set-up time and tool and production costs.

Send for new catalog
Territory Open

REISINGER MACHINE TOOL CORP.
837 LAKE AV., ROCHESTER, N. Y.

THOMPSON
10"x36"
Universal

ALL Grinding on ONE Machine—

Thoroly efficient, accurate and dependable. Work adjusts to a fixed grinding wheel — an exclusive feature that's better.

Does all kinds of grinding like a single purpose machine.

Can now be equipped with the new auxiliary coarse cross feed for surface grinding.

Saves
Time
and
Money

The Thompson Grinder Co.
Springfield, Ohio

Repay Cost 5 Times a Year

Let us tell you about the BIG Profits in TOWSLEY Trucks

Efficiency EXPERTS say that

TOWSLEY TRUCKS

repay their cost every two to three months.

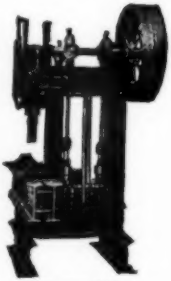
Every style for every need.

Many Sizes and Styles from $10 up.

Write us for details of the BIG truck profits today!

John T. Towsley Mfg. Co., Cincinnati, Ohio, U. S. A.

Lourie Hydraulic Presses



Type W

A High Speed Press

for

Straightening
Moulding
Punching
Forming

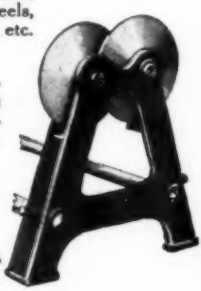
Lourie Hydraulic Co.
Springfield, Illinois

Twentieth Century Balancing Tool

Always on the level

The most practical, sensitive and inexpensive device manufactured for balancing pulleys, cones, armatures, fly wheels, polishing wheels, etc.

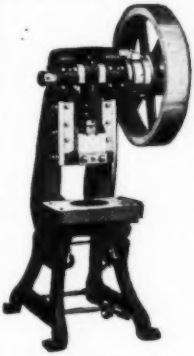
Will set anywhere and is easily portable. In sizes up to 24,000 pounds capacity.



Ask for the Bulletin

Sundstrand Machine Tool Co.
Rockford, Ill.

The Spirit Of the Times



is reflected in the speed and stamina of Rockford High Duty Punch Presses.

They are built to produce and maintain Hi-Production—and they do it.

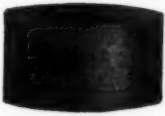
Wide range of sizes and types.

Write today for new catalog

Rockford Iron Works
Rockford, Ill.

We've Made Punches Over 35 Years

Anyone who has made punches for over 35 years knows how, and T. H. L. Punches are as good as we know how to make them. As a result they give satisfactory, continuous and profitable service.



Send us a trial order and you'll come again. We carry a large stock of regular sizes for immediate delivery. Special sizes quickly made. Don't you need a few now? Let us hear from you.

T. H. Lewthwaite Machine Co.
311 East 47th St., *(Est. 1890)* **New York City**

Announcing!

A New Size Ettco Tapper

"Sensitive as your Finger Tips."

No. 1 Ettco Tapper—capacity ¼-inch.
No. 2 Ettco Tapper—capacity ⅜-inch.

No. 2—Capacity 0 to ⅜"

Anything that can be tapped by hand can be tapped with an Ettco tapper. The Ettco taps blind holes as easily as those which go through—and it eliminates broken taps.

There is no friction to adjust in the Ettco.

Production increased 100% to 500% on many jobs.

Don't condemn the taps you are using; try an Ettco tapper for ten days without obligation.

Eastern Tube & Tool Co., Inc., 600 Johnson Ave., BROOKLYN, N. Y.

No. 2 ALTO Motor Driven Three Speed Tapping Machine

Semi-Automatic

SAVES—time.
SAVES—taps.
SAVES—in the first cost and in the long run.

Its main points are—

Motor driven, 3 speed, double speed reverse, quick change, back geared cone clutch. Sensitive for small tapping and powerful enough to drive ⅜" taps through steel.

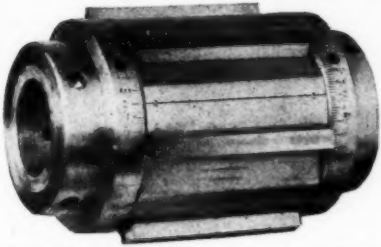
We also make smaller high speed tappers.

Write for descriptive literature and attractive prices

The Alto Mfg. Co., 1647-51 Wolfram St. Chicago, Ill.

Lambert Reamers—

With Standard Bores to Fit Your Boring Bars



Made in styles and sizes to fit your requirements.

Fitted entirely with High Speed Blades.

The 5 in. Tool shown expands 1 in. They all afford quick, accurate setting, and will reduce your costs. Send for prices and catalog.

Lambert Machine & Engineering Co.
Euclid Ave. and 55th St., Cleveland, Ohio

"WEAR-EVER"

Self-Aligning Reamer Holders

For Screw Machines—Turret Lathes—Drill Presses

COMPENSATES for all irregularities in machine alignment. Reamer can float to one side, at the same time swing on an angle in any direction to align itself with the work.

THESE HOLDERS are made in five standard sizes for reamers up to 3" diameter. Adaptable to any style machine drive or reamer shank.

ORDER ONE ON APPROVAL

Get our Small Tool Catalog No. 35 for details

SCULLY-JONES & CO., ***TOOL DIVISION***
2010 W. 13th Street, CHICAGO, ILL.

Representatives and Local Stocks

CLEVELAND, OHIO, - Cleveland Tool & Supply Co., 1427 W. Sixth St.
DETROIT, MICH., - Gross & Beming, 704 Detroit Savings Bank Bldg.
NEW YORK CITY, - - L. C. Biglow & Co., Inc., 250 W. 54th St.

Ettco Keyless Ball Bearing Drill Chucks

Tremendous Gripping Power

Seven good reasons for using the ETTCO

1. Lighter in weight.
2. All hardened parts.
3. Keyless.
4. Hand operated.
5. Ball bearing.
6. Continuous grip.
7. Simple construction.

Eastern Tube & Tool Company, Inc.
600 Johnson Avenue, BROOKLYN, N. Y.

Winterhoff Portable Production Drills

No. 0 JUNIOR DRILL
10½" Swing, 0 to ⅜" Capacity

Equipped with ¼ h. p. motor, two step cone pulley giving speeds of 1100 and 2300 r. p. m., horizontal drive gives full power to the 1¼" endless belt furnished with machine. Driven cone has bearing support at each end; all parts accurately machined and interchangeable. ***Positively the greatest value*** ever offered in a machine of this kind. Furnished with square machined base at same price.

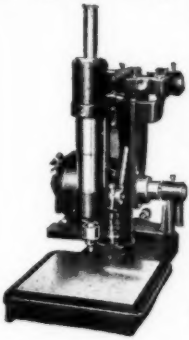
Drills, Grinders, Disc Grinders, Saws, Sanders. All motor driven.

Send for circulars describing these machines or see your Dealer.

$55, F. O. B. Elkhart

Winterhoff Tool & Machine Co.
109 South Elkhart Ave., Elkhart, Ind., U. S. A.

Sigourney Sensitive Drills



The Quality Tools That Reduce Costs

SIGOURNEY DRILLS are designed for those who realize that the best tools pay the largest returns on the investment.

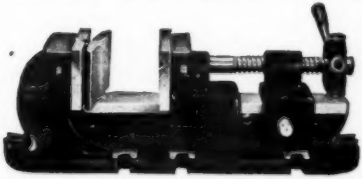
Made with one to four spindles, plain or ball bearing, belt or motor drive. *All parts interchangeable.*

The illustration shows our motor-driven, all-ball-bearing No. 0 High Speed Bench Drill which may be operated up to **10,000 R.P.M.**

Full data and prices sent you on request.

Sigourney Tool Co.
Hartford, Conn., U.S.A.

'Most Efficient Vise Made'



GEM Drill Press Vise

THAT will also be your verdict when you know its power, capacity, adaptability and lightning speed of setting. Designed by a mechanic for mechanics. The independent swivel jaw holds taper and irregular work with a bull-dog grip. The Gem saves time in shop and factory. The folder shows its use in drilling and milling operations.

Glad to mail you a copy

J. E. Martin Tool & Die Works, 528 W. State St. Springfield, O.

U. S. MULTIPLE SPINDLE Drill Heads

Made regularly with 2 to 6 adjustable spindles, to drill in *any pattern.* Special heads to order.

Also made with fixed spindles to fit your work.

Drills two or more holes with the same speeds and feeds that are used for drilling one.

Send us a layout of your work and we'll help to reduce your costs

The United States Drill Head Co., 1952 W. Sixth St., CINCINNATI, O.

Michigan Agents—National Sales Engineering Corp., Detroit, Mich.

U. S. Sensitive 14" Floor Drill Motor Driven

A simple, rugged, convenient drill; built by machine tool manufacturers. Drills holes up to ½"—quickly, accurately and economically.

Price with motor, switch and belts -	$115
Or with Countershaft for Belt Drive	$70

Steel spindle, ground to size, with ball thrust bearing; vertical adjustment to head; tables for long and short work; three speeds, etc. Write for folder, or better still send in your order.

The U. S. Machine Tool Co.
1952 W. 6th St., Cincinnati, Ohio

We are Specialists in "Quality" Hollow Bored Forgings and Steel Shafts

Our specialized equipment and experience enable us to furnish you with "quality" piston rods, clutch shafts, lathe spindles, rams, steel pipes, hydraulic cylinders, etc., at reasonable prices and with prompt delivery service.

Send us blueprints for estimate

American Hollow Boring Co.
Erie, Penna.

Announcement

Wiard Quick Change Chucks

Collets and Repair Parts Formerly Manufactured by The American Standard Tool Works Can Now Be Purchased From

The J. C. Glenzer Company

6469 Epworth Boulevard,
DETROIT, MICH.

Who Have Acquired the Patents, Jigs, Gauges, Special Machinery, Etc.

Production of These Chucks Is Well Under Way and a Complete Stock Will Be Carried In Detroit.

MAY WE HAVE YOUR INQUIRIES?

DEMCO

4 Point Drill Press Vise

This new Vise solves the problem of holding irregular shaped parts requiring a tapping or drilling operation.

Built in large and small sizes
Price $15.00 and $25.00 respectively

Write for our new Bulletin

DEMCO Inc., 105-115 S. Calvert St., **Baltimore, Md.**

Always Ready for Service—

Our Stock Room Service is complete. We can fill all orders the day they're received.

BUCKEYE BETTERBUILT BUSHINGS

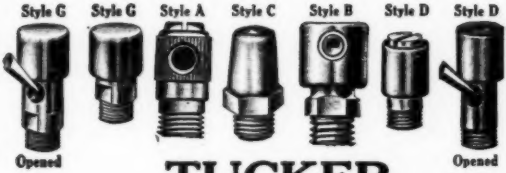
These Stock Bushings come machined, ready for instant use. All are broached, burnished and ***ground*** to extreme uniform accuracy. Standard or special oil grooves or drilled holes at a small extra charge. Rigid inspection prevails.

We also make to ***Blue Print***—bushings, bearings and cast bronze screw machine products in any quantity, any size, any analysis.

COMMERCIAL CORED, SOLID BRONZE BARS

Write for list of sizes carried in stock. Special sizes and castings upon request. Ask for Weight Chart.

Buckeye Brass & Mfg. Co., 6400 Hawthorne Ave., CLEVELAND, OHIO



TUCKER

Oil Hole Covers

ALSO—HERCULES
SHEAR AND ROD CUTTERS
AND
SCREW MACHINE PRODUCTS

A Type for Every Service

Send for Catalogue No. 12

W. W. & C. F. TUCKER, INC., 612 Capitol Ave., Hartford, Conn.

FOREIGN AGENTS: Fenwick Freres & Co., Paris, France
Alfred Herbert, Ltd., Yokohama, Japan

STOP

That Machine Shop Labor Loss

You pay for a combination drill table and vise *every six months* in your labor pay roll. Why not buy one and stop this waste? It saves time and increases safety. Made in four sizes, from 8" to 28" diameter. *Every* shop needs one.

Write for illustrated folder describing the Combination and FREE TRIAL OFFER. No obligation!

MODERN MACHINE TOOL COMPANY
JACKSON, MICH.

Re-Orders Tell the Story Of "The Handiest Racks"

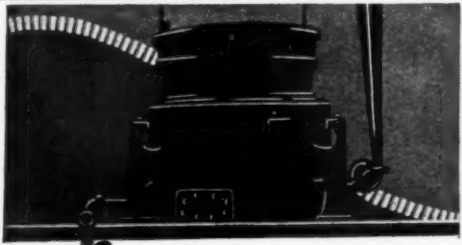
One manufacturer (name on request) ordered them as follows:

May 17,	6 Racks
May 31,	6 "
July 5,	24 "

We believe they use these to service machines. But whether employed for convenient storage, or for keeping stock within easy reach of machine, they repay their cost many times over. Can be set against wall or back to back as double-arm racks.

So good we ship on trial
They rarely come back

Wm. S. Yohe Supply Co.
503 Mahoning Road, N. E., Canton, Ohio



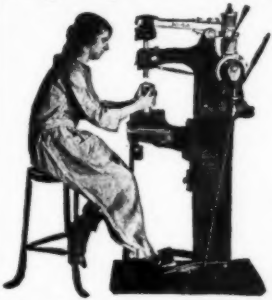
Save Cutting Oil!

6 to 15 gallons per load—three or four loads per hour. ***Write for catalog.***

Tolhurst Machine Works
Established 1852
Troy, N. Y.

High Speed Riveting Hammers

(Patd.)



Cold Riveting

1/64 to 1½" in diameter

Write for Catalog "C"

SEND SAMPLES to be riveted and returned with complete production data.

The High Speed Hammer Company, Inc.

311 Norton St., Rochester, N. Y.

Curtis Universal Joints

of Simple, Rugged Construction

Send for Catalog No. 47

BOSTON GEARS

BOSTON GEAR WORKS SALES CO.

Norfolk Downs, Mass.

BOSTON NEW YORK PHILADELPHIA CLEVELAND CHICAGO

The Accepted Standard In Dust Collecting

The Rarefied Dust Collector

To substantiate the above fact, ask one of our users, such as the Westinghouse Company—equipped with 34 "Rarefieds," or the Western Electric, at present using 23—the Solvay Process, with 26; we could refer you to a score of big users. When the "Rarefied" has proved itself in this fashion so conclusively, there must be good reasons—here they are:

The suction never varies.
Assured collection of all heavier than air dust.
Collected waste automatically discharged.
No hand cleaning.
No meshes to fill or clog.
No moving parts to get out of order.
Inner walls are interchangeable.
No cutting out of fan.
A 40% saving in power may be effected.
Repair costs are held at zero.

Aren't these reasons conclusive? Think it over and write

THE KNICKERBOCKER COMPANY
JACKSON, MICH.

Analysis of Circulation of

HITCHCOCK'S MACHINE TOOL BLUE BOOK

By Dun and Bradstreet Ratings

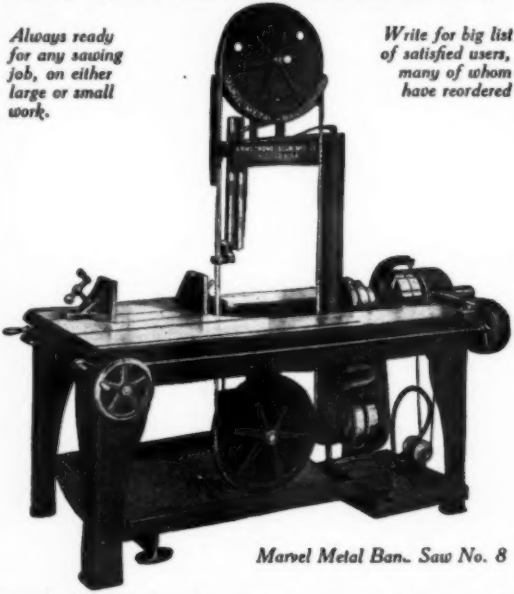
	Number Concerns
Exceeding $1,000,000	1,483
$500,000 to $1,000,000	916
$300,000 to $ 500,000	948
$200,000 to $ 300,000	842
$125,000 to $ 200,000	1,305
$ 75,000 to $ 125,000	1,455
$ 50,000 to $ 75,000	1,162
$ 20,000 to $ 50,000	2,847
$ 10,000 to $ 20,000	1,879
$ 5,000 to $ 10,000	1,672
TOTAL, Private Concerns Rated over $5,000	14,509
Steam and Street Railway Mechanical and Purchasing Officials, Government and Municipal Plants, Technical Schools, Foreign Dealers in American Machinery, Etc.	3,470
TOTAL to Buyers of Known Responsibility	17,979
*Concerns quoted in Dun or Bradstreet, but without Capital Rating	2,802
Concerns not yet in either Dun or Bradstreet, but in current Telephone Directories	1,799
Concerns rated below $5,000	2,677
TOTAL CIRCULATION	**25,257**

*This group includes a considerable number of large concerns, and many small concerns of high credit, whose capital rating is not given by either of the commercial agencies.

The Marvel Metal Band Saw

Always ready for any sawing job, on either large or small work.

Write for big list of satisfied users, many of whom have reordered



Marvel Metal Ban.. Saw No. 8

UNIVERSAL in its adaptation to every variety of metal sawing. It saws bars, beams, channels, tubes. etc., rapidly and accurately, and does the finest tool room work. Saws at an angle either way without swinging the bar around the shop. Has big capacity up to 18". The large bed gives lots of room for material and tools. A saw for every need.

Write for Circular or the Complete Catalog of MARVEL Saws

ARMSTRONG-BLUM MFG. CO., 341 N.

Do your Hack Saw Blades break?
Or do they wear out too fast?

Use the New Patented

Marvel High-Speed-Edge Hack Saw Blade

For Use In All Power Machines

Genuine High Speed Steel Cutting Edge
Positively Unbreakable

HIGH-SPEED-EDGE
MARVEL
LAPTSHORD-BLUM MFG. Co. CHICAGO U.S.A.

[Made in 12, 14, 17, 18, 21 and 24 inch lengths.]

[6, 8, 10, and 14 teeth to the in., in all lengths.]

Points of Superiority

Guaranteed.
Original, patented.
Cuts twice as fast.
Positively unbreakable.
A straighter, truer cut.
Most economical, most efficient.
Genuine high speed steel cutting edge.
At least six times the amount of cutting.
Modern methods of manufacturing assure uniformity.

They outlast common blades many times over, never break in the machine, and are cheaper in the end.

Once tried, you will want no other. Complete details and prices on request.

341 N. Francisco Ave., CHICAGO, ILL.

Stop Wasting Time and Money

Use

HYRO
SHUR-GRIP
FILE HANDLES

(Patented July 12, 1921—No. 1,384,154)

They
Screw On and STAY ON

Standardized and Used in Shops where Economy and Efficiency are Practiced.

Carried in stock by Leading Jobbers

HYRO MFG. CO., Inc.
351-361 West 13th St., New York, N. Y.

HYRO
PRODUCTS
"Speed Up Production"

Etchograph

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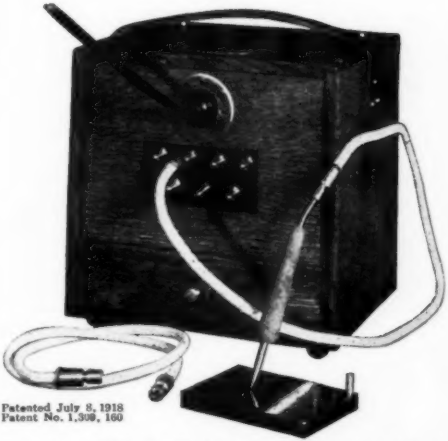

Patented July 8, 1918
Patent No. 1,309, 160

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an absolutely level and solid "Way" is necessary

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are brought to an absolute *level* in ten seconds. No revolving parts.

The edges or "knives" upon which the work is tested are ground *true*, and are mounted upon the planed "ways" of a heavy bed or frame.

Standards adjustable to suit length of arbor.

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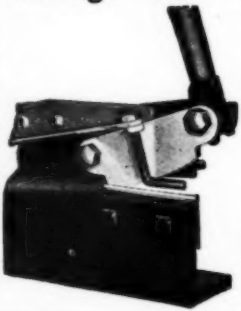

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Flat Bars 3/16 x2 in. Weight 22 Lbs.

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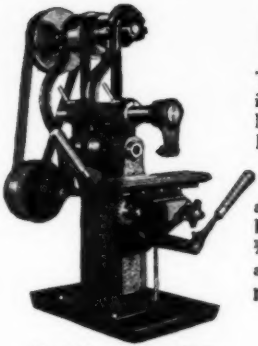

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BURKE

The same care has been used in the manufacture of the new Nos. 3 and 4 Motor-Driven Milling Machines as has been used in all Burke Tools, such as ball-bearing countershaft, all moving parts perfectly balanced, and Heavy-Duty ½ H. P. motor is used giving ample power within the capacity of machines.

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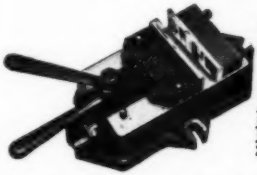
An Unusual Milling Vise



Jaw width .....5"
Jaw depth .....1¼"
Maximum opening...3½"
Weight.....40 lbs.

Also made in the swivel-jaw type with hard or soft jaws, maximum opening 2¼".

This unusual milling vise has the power and durability to handle any job within its dimensions and to stand up under the hardest usage. A special design includes a cam handle that gives instantaneous opening and return, and a top eccentric lever handle that furnishes unequalled binding power. Steel parts drop forged, hardened and ground.

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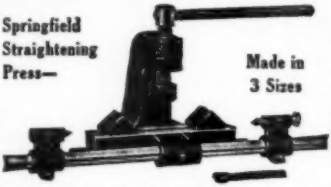

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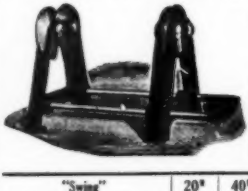

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Require no leveling or adjustment. They are especially sensitive! Spindles and discs are hardended like the frame—they cannot lose their effectiveness or become injured by use.

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Greatest distance bet. standards	20"	30"	30"	66"	88"	20'
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Code	Bend	Bid	Bin	Bib	Ben	

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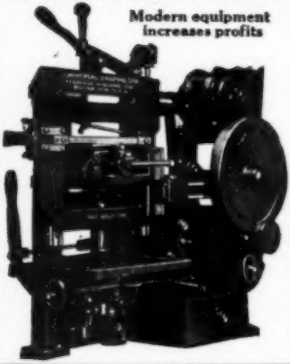

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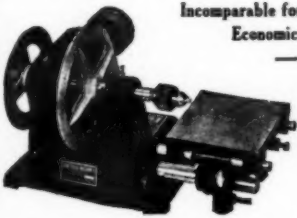

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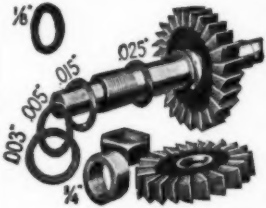

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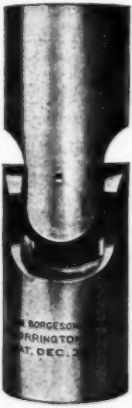

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You can easily figure the saving it effects—one man with a CanTon does the work which ordinarily takes 6 to 10 men.

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LeBlond Mch. Tool Co., R. K., Cincinnati, O.
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Porter Cable Machine Co., Syracuse, N. Y.

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Standard Electrical Tool Co., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.

Grinding Machines, Universal
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Landis Tool Co., Waynesboro, Pa.
Thompson Grinder Co., Springfield, Ohio

Hack Saw Blades
Peerless Machine Co., Racine, Wis.

Hack Saw Machines
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Peerless Machine Co., Racine, Wis.
Racine Tool & Machine Co., Racine, Wis.

Hammers, Riveting
High Speed Hammer Co., Rochester, N. Y.

Handles, File
Hyro Mfg. Co., 352 W. 13th, New York.

Handles, Soldering Iron
Hyro Mfg. Co., 352 W. 13th, New York.

Hoists, Portable
Canton Foundry & Machine Co., Canton, Ohio

Hydraulic Machinery
Lourie Hydraulic Co., Springfield, Ill.

Instruments, Engineering and Surveyors
Pease Co., C. F., 865 N. Franklin, Chicago

Jigs and Fixtures
Hartford Special Mchy. Co., Hartford, Conn.

Keyseating Machines
Burr & Son, John T., Brooklyn, N. Y.
Chattanooga Mchy. Co., Chattanooga, Tenn.
Davis Keyseater Co., Rochester, N. Y.
National Machine Tool Co., Cincinnati

Lathe Accessories and Attachments
Cisco Machine Tool Co., Cincinnati, O.
Maxwell Products Co., Cleveland, O.

Lathe Turrets
Maxwell Products Co., Cleveland, O.

Lathes, Bench
Hardinge Brothers, Inc., 1770 Bertean Ave., Chicago
Monarch Machine Tool Co., Sidney, O.
Oliver Mfg. Co., W. W., Buffalo, N. Y.

Lathes, Engine
American Tool Works Co., Cincinnati, O.
Barnes Co., W. F. & John, Rockford, Ill.
Boye & Emmes Mch. Tool Co., Cincinnati, O.
Bradford Machine Tool Co., Cincinnati, O.
Carroll Mchc. Tool Co., A. V., Cincinnati, O.
Carroll & Jamieson Mch. Tool Co., Batavia, O.
Cisco Machine Tool Co., Cincinnati, O.
Hamilton Tool Co., Hamilton, O.
Hardinge Brothers, Inc., 1770 Bertean Ave., Chicago
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Monarch Machine Tool Co., Sidney, O.
Porter-Cable Machine Co., Syracuse, N. Y.
Springfield Machine Tool Co., Springfield, O.

Lathes, Extension Bed Gap
Rahn-Larmon Co., Cincinnati, O.

Lathes, Foot Power
Barnes Co., W. F. & John, Rockford, Ill.

Lathes, Gap
Carroll Mchc. Tool Co., A. V., Cincinnati, O.

Lathes, Manufacturing
Sundstrand Machine Tool Co., Rockford, Ill.

Lathes, Short Bed
Artisan Mfg. Co., Cincinnati, O.
Monarch Machine Tool Co., Sidney, O.
Porter-Cable Machine Co., Syracuse, N. Y.

Lathes, Turret
Bradford Machine Tool Co., Cincinnati, O.
Monarch Machine Tool Co., Sidney, O.

Classified Finding Index

Mandrels, Expanding
Nicholson & Co., W. H., Wilkes-Barre, Pa.
Western Tool & Mfg. Co., Springfield, O.

Mandrels, Hollow
Hyro Mfg. Co., 352 W. 13th, New York.

Mandrels, Solid
Nicholson & Co., W. H., Wilkes-Barre, Pa.

Metal-Workers, Combination
Artisan Mfg. Co., Cincinnati, O.

Milling Attachments
Burke Machine Tool Co., Conneaut, Ohio
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Porter-Cable Machine Co., Syracuse, N. Y.
Taylor & Fenn Co., Hartford, Conn.

Milling Machine Spacing Washers
Maxwell Products Co., Cleveland, O.

Milling Machines, Bench
Burke Machine Tool Co., Conneaut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Hand
Burke Machine Tool Co., Conneaut, Ohio
Sundstrand Machine Tool Co., Rockford, Ill.
U. S. Machine Tool Co., Cincinnati, O.

Milling Machines, Manufacturing
Kearney & Trecker Corp., Milwaukee, Wis.

Milling Machines, Plain
Burke Machine Tool Co., Conneaut, Ohio
Gallmeyer & Livingston Co., Grand Rapids, Mich.
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Sundstrand Machine Tool Co., Rockford, Ill.

Milling Machines, Portable
Pedrick Tool & Machine Co., Philadelphia

Milling Machines, Spline
Taylor & Fenn Co., Hartford, Conn.

Milling Machines, Universal
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.

Milling Machines, Vertical
Burke Machine Tool Co., Conneaut, Ohio
Kearney & Trecker Corp., Milwaukee, Wis.
LeBlond Mch. Tool Co., R.K., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.

Mills, Adjustable Hollow
Genesee Mfg. Co., Rochester, N. Y.
Reisinger Mch. Tool Corp., Rochester, N.Y.

Motors, Electric
Fairbanks, Morse & Co., Chicago
Reliance Electric & Eng. Co., Cleveland

Name Plates, Etched and Stamped
Schwerdtle Stamp Co., Bridgeport, Conn.

Nut Setters, Flexible Shaft
Blax Flexible Shaft Co., 136 Liberty Street, New York

Oil Cups
Gits Bros. Mfg. Co., 1940 S. Kilbourn Ave., Chicago
Tucker, W. W. & C.F., Inc., Hartford, Conn.

Oil Extractors
Telburst Machine Works, Troy, N. Y.

Oil Hole Covers
Tucker, W. W. & C.F., Inc., Hartford, Conn.

Pattern Shop Machinery
Towsley Mfg. Co., John T., Cincinnati

Pins, Leader And Dowel
Danly Machine Specialties, Inc., 4913 Lincoln Ave., Chicago

Pipe Bending Machines
Pedrick Tool & Machine Co., Philadelphia

Pipe Cutting and Threading Machines
Chicago Pipethread Co., Racine, Wis.

Planers, Valve Seat, Portable
Pedrick Tool & Machine Co., Philadelphia

Point Thinning Machines
Oliver Instrument Co., Adrian, Mich.

Pointers, Semi-Automatic
Kent Machine Co., Cuyahoga Falls, Ohio.

Polishing and Buffing Machines
Cisco Machine Tool Co., Cincinnati, O.
Hiney-Wolf Machine Co., Cincinnati, O.
Mail Tool Co., 8339 S. Chicago Ave., Chicago
New Britain Machine Co., New Britain, Conn.
North Side Tool Co., Dayton, Ohio
Standard Electrical Tool Co., Cincinnati, O.

Presses, Arbor
Atlas Press Co., Kalamazoo, Mich.
Barnes Co., W. F. & John, Rockford, Ill.
Lourie Hydraulic Co., Springfield, Ill.
Nicholson & Co., W. H., Wilkes-Barre, Pa.

Presses, Broaching
Lourie Hydraulic Co., Springfield, Ill.

Presses, Drawing
Lourie Hydraulic Co., Springfield, Ill.

Presses, Flanging
Lourie Hydraulic Co., Springfield, Ill.

Presses, Foot
Rockford Iron Works, Rockford, Ill.
Taylor & Fenn Co., Hartford, Conn.

Presses, Forcing
Lourie Hydraulic Co., Springfield, Ill.
Lucas Machine Tool Co., Cleveland, O.

Presses, Forming
Dreis & Krump Mfg. Co., 7422 Loomis Blvd., Chicago
Lourie Hydraulic Co., Springfield, Ill.

Presses, Power
Handley & Whittemore Co., Beloit, Wis.
Lourie Hydraulic Co., Springfield, Ill
Lucas Machine Tool Co., Cleveland, O.
Rockford Iron Works, Rockford, Ill.

Presses, Punch
Lewthwaite Mchs. Co., T.H., 417E. 31st., N.Y.
Rockford Iron Works, Rockford, Ill.

Presses, Screw
Barnes Co., W. F. & John, Rockford, Ill.
Jarecki Mchs. & T. Co., Grand Rapids, Mich.
Towsley Mfg. Co., John T., Cincinnati

Presses, Wheel
Lourie Hydraulic Co., Springfield, Ill.

Profiling Machines
Oliver Instrument Co., Adrian, Mich.

Pulley Machinery
Avey Drilling Machine Co., Cincinnati

Classified Finding Index

Pumps, Coolant
Fulflo Specialties Co., Blanchester, O.

Pumps, Hydraulic
Louis Hydraulic Co., Springfield, Ill.

Punch Press Feeds
Rockford Iron Works, Rockford, Ill.

Punch, Shear and Bender, Hand
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago

Punches, Hand
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Hyro Mfg. Co., 352 W. 13th, New York.
Lewthwaite Mche. Co., T. H., 417 E. 21st St., New York
Whitney Metal Tool Co., Rockford, Ill.

Punches, Power
Hendley & Whittemore Co., Beloit, Wis.

Punches and Dies
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mche. Co., T. H., 417 E. 21st., N. Y.
Rockford Iron Works, Rockford, Ill.

Racks, Bar Stock
New Britain Machine Co., New Britain, Conn.
Pollard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago
Yohe Supply Co., Wm. S., Canton, O.

Reamers, Adjustable
Schellenbach-Hunt Tool Co., Cincinnati, O.

Reamers, Expanding
Lambert Mche. & Engine'g Co., Cleveland, O.

Reamer Holders
Nicholson & Co., W. H., Wilkesbarre, Pa.

Reels, Extension
Cincinnati Specialty Mfg. Co., Cincinnati, O.

Riveting Machines
Grant Mfg. & Mche. Co., Bridgeport, Conn.
High Speed Hammer Co., Rochester, N. Y.

Rod Cutters
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Mche. Co., T. H., 417 E. 21st., N. Y.
Tucker, W. W. & C. F., Inc., Hartford, Conn.

Saw Sharpening Machines
Wardwell Mfg. Co., Cleveland, O.

Scraping Machines, Hand & Pneumatic
Anderson Brothers Mfg. Co., Rockford, Ill.

Screw Drivers, Electric
Hisey-Wolf Machine Co., Cincinnati, O.

Screw Drivers, Flexible Shaft
Blax Flexible Shaft Co., 136 Liberty Street, New York

Screw Driving Machines, Automatic
Reynolds Machine Co., Massillon, Ohio

Screw Machine Products
Buckeye Brass & Mfg. Co., Cleveland, O.

Screw Machines, Automatic
New Britain Mche. Co., New Britain, Conn.

Screw Slotters
Kent Machine Co., Cuyahoga Falls, Ohio.

Shafts, Flexible
Blax Flexible Shaft Co., 136 Liberty St., N. Y.
Keller Mech. Eng. Corp., 68A Washington St., Brooklyn, N. Y.
Mall Tool Co., 8380 S. Chicago Ave., Chgo.
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N. A., 5001 N. Lincoln St., Chgo.

Shafts, Steel
American Hollow Boring Co., Erie, Pa.

Shaping Machines
American Tool Works Co., Cincinnati, O.
Osborne & Sexton Machy. Co., Columbus, O.
Rhodes Mfg. Co., Hartford, Conn.
Smith & Mills Co., Cincinnati
Springfield Machine Tool Co., Springfield, O.

Shears, Alligator
Canton Foundry & Machine Co., Canton, O.

Shears, Hand
Armstrong-Blum Mfg. Co. 341 N. Francisco Av., Chicago
Dreis & Krump Mfg. Co., 7422 Loomis Blvd., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Lewthwaite Machine Co., T. H., 417 E. 21st St., New York
Oliver Mfg. Co., W. W., Buffalo, N. Y.
Tucker, W. W. & C. F., Inc., Hartford, Conn.
Whitney Metal Tool Co., Rockford, Ill.

Shears, Power
Hendley & Whittemore Co., Beloit, Wis.

Slotting Machines
Rhodes Mfg. Co., Hartford, Conn.

Spacing Washers
Detroit Stamping Co., Detroit, Mich.

Special Tools and Machinery
Bradford Machine Tool Co., Cincinnati, O.
Foote Bros. Gear & Machine Co., 213 Curtis St., Chicago
Stecher Co., Chas., 2452 N. Greenview Ave., Chicago

Speed Reducers
Foote Bros. Gear & Machine Co., 213 Curtis St., Chicago

Sprockets
Foote Bros. Gear & Machine Co., 213 Curtis St., Chicago
Massachusetts Gear & T. Co., Woburn, Mass.

Stamps, Steel and Rubber
Schwerdtle Stamp Co., Bridgeport, Conn.

Stencils, Brass and Oil Board
Schwerdtle Stamp Co., Bridgeport, Conn.

Stools and Chairs, Factory
Chicago Wire Chair Co., 619 N. La Salle St., Chicago
Pollard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago

Straightening Machines
Springfield Machine Tool Co., Springfield, O.
Townley Mfg. Co., John T., Cincinnati
Whitney Metal Tool Co., Rockford, Ill.

Tables and Stools, Draftsman's
Pease Co., C. F., 865 N. Franklin, Chicago

Tap Extractors
Walton Co., Hartford, Conn.

Tapping Machines and Attachments
Alto Mfg. Co., 1647 Wolfram St., Chicago
Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Conneaut, Ohio
Eastern Tube & Tool Co., Inc., 580 Johnson Ave., Brooklyn, N. Y.
Leland-Gifford Co., Worcester, Mass.
Rickert-Shafer Co., Erie, Pa.
Whitney Metal Tool Co., Rockford, Ill.

Classified Finding Index

Thread Dials
Colven, J. M., Yonkers, N. Y.

Thread Milling Attachments
Cinco Machine Tool Co., Cincinnati, O.

Threading Machines
Kent Machine Co., Cuyahoga Falls, Ohio.
Eickert-Shafer Co., Erie, Pa.

Threading Tools
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

Tool Holders
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago
Western Tool & Mfg. Co., Springfield, O.

Tool Racks
Chicago Wire Chair Co., 419 N. La Salle St., Chicago

Tool Stands
Pollard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago

Tools, Boring
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

Tools, Lathe and Planer
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

Tools, Machinists'
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

Tools, Spot Facing
Genesee Mfg. Co., Rochester, N. Y.
Reisinger Mch. Tool Corp., Rochester, N.Y.

Trucks, Machine Shop
New Britain Machine Co., New Britain, Conn.
Pollard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago
Towsley Mfg. Co., John T., Cincinnati

Turntables
Canton Foundry & Machine Co., Canton, O.

Universal Joints
American Tool Works, Inc., Hartford, Conn.
Bergeson Mfg. Co., Inc., Torrington, Conn.
Boston Gear Works Sales Company, Norfolk Downs, Mass.

Used and Rebuilt Machinery
Associated Machine Tool Co., 180 7th St., Brooklyn, N. Y.
Bath & Co., Cyril J., Cleveland, O.
Bennett Mchy. Co., 50 Church St., New York
Bernstein & Co., Geo. M., 549 W. Washington Blvd., Chicago
Bertolette Machine Tool Co., Inc., Jersey City, N. J.
Brown Machinery Co., St. Louis, Mo.
Brownell Machinery Co., Providence, R. I.
Carlson Machinery Co., Davenport, Iowa
Cincinnati Mchy. & Supply Co., Cincinnati, O.
Clark Machinery Co., Cleveland, O.
Clinton Mchry. Co., 128 S. Clinton, Chicago
Colcord-Wright Mchy. Co., St. Louis.
Co-Operative Machinery Co., Cleveland, O.
Delta Equipment Co., Philadelphia, Pa.
Donahue Steel Products Co., 74th and Ashland Ave., Chicago
Eastern Machinery Co., Cincinnati, O.
Easley Machinery Co., E. L., 556 Washington Blvd., Chicago
Fitzsimmons-Cole Mchy. Co., Pittsburgh, Pa.
Foster Machinery Co., Cleveland, O.
Haetten & Co., J. E., Inc., 50 Church St., New York
Harris Bros. Co., 25th & Iron, Chicago
Hill, Clarke & Co., 649 W. Washington Blvd., Chicago
Hyman & Sons, Joseph, Philadelphia
Irwin Mfg. Co., H. E., Cincinnati, Ohio.

Used and Rebuilt Machinery—Continued
Johnson & Sons Machinery Co., Wm. C., St. Louis, Mo.
Jones Machine Tool Co., Cincinnati, O.
Kinney Co., E. A., Cincinnati, O.
Klauber Mchy. Co., E. L., St. Louis.
Little Co., W. P., Cleveland, O.
Lucas & Son, F. B., Inc., Bridgeport, Conn.
McDonald Machinery Co., St. Louis
McMullen Mchy. Co., Grand Rapids, Mich.
Marr-Galbreath Mchy. Co., Pittsburgh, Pa.
Marsh Machinery Co., A. R., Cleveland, O.
Midland Equipment Co., 612 W. Van Buren, Chicago
Mid-West Machine Tool & Supply Company, Davenport, Iowa
Miles Machinery Co., Saginaw, W. S., Mich.
Molitor Machy. Co., Char., 118 S. Clinton St., Chicago
Morey and Co., Inc., 409 Broome St., N. Y.
Morris Machinery Co., Inc., Newark, N. J.
Motch & Merryweather Machinery Co., Cleveland, O.
Nelson Machinery Co., Green Bay, Wis.
New Jersey Mchy. Exch., Newark, N. J.
Niles Tool Works Co., Hamilton, O.
Norton-Broadway Mchy. Co., Cincinnati, O.
O'Brien Machinery Co., Philadelphia
Osborne & Sexton Machy. Co., Columbus, O.
Pattison Supply Co., W. M., Cleveland, O.
Peninsular Machinery Co., Detroit, Mich.
Prentiss & Co., Henry, 149 Broadway, N.Y.
Randle Machinery Co., Cincinnati, O.
Reeve-Fritts Co., 37 S. Desplaines, Chicago
Reliance Mchy. Sales Co., Pittsburgh, Pa.
Rentschler & Co., J. P., 6722 N. Maplewood Ave., Chicago
Riverside Machinery Depot, Detroit, Mich.
Russell Machine Co., Pittsburgh, Pa.
Saltzman, B. L., 909 W. Lake St., Chicago
Scott - Bansbach Machinery Co., 130 So. Clinton, Chicago
Seifreat-Elstad Machinery Co., Dayton, O.
Severin-Strafer Machinery Corp., 50 Church St., New York
Simmons Machine Tool Corp., Albany, N.Y.
Stocker-Rumely-Wachs Co., 117 N. Jefferson St., Chicago
Stoehr Machinery Co., A. M., 418 Mid-City Bank Bldg., Chicago
Strong, Carlisle & Hammond Co., Cleveland
Sun Machinery Co., Newark, N. J.
Surplus Machinery Co., Kalamazoo, Mich.
Syracuse Supply Co., Syracuse, N. Y.
Taylor-Hall Welding Corp., Worcester, Mass.
Tubor, Velick & Co., Inc., Lake & Desplaines Sts., Chicago
United Mchy. & Supply Co., St. Louis.
Wayne Machinery Co., Ft. Wayne, Ind.
White Machy. Co., A. D., 108 N. Jefferson St., Chicago
Wickes Machinery Co., Jersey City, N. J.
Winterer, Herman L., Philadelphia

Vises, Drilling Machine
Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago
Demco, Incorporated, Baltimore, Maryland.
Martin Tool & Die Works, J. E., Springfield, O.

Vises, Machinists'
New Britain Machine Co., New Britain, Conn.
Western Tool & Mfg. Co., Springfield, O.

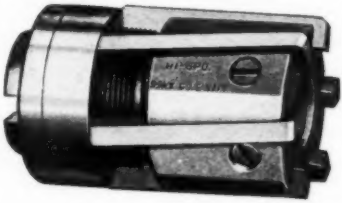
Vises, Milling Machine
Hartford Special Mchy. Co., Hartford, Conn.

Welders, Electric Spot
Taylor-Winfield Corp., Warren, O.

Wood Working Machinery
Hendley & Whittemore Co., Beloit, Wis.
New Britain Machine Co., New Britain, Conn.
Porter-Cable Machine Co., Syracuse, N. Y.
Towsley Mfg. Co., John T., Cincinnati

Worms
Massachusetts Gear & T. Co., Woburn, Mass.

"X-L" Adjustable Inserted Spiral Blade Shell and Machine Reamer



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One Thomson 25 auto. butt welder.

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Drill, American 4′ radial.
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Lathes, Monarch 20″x10′.
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Grinder, Gisholt universal.
Grinder, D-4-T G. R. drill.
Lathe, 18x9 Chard.
Miller, P. & W. 4″ spline.
Miller, W. & S. 2-spindle.
Miller, No. 3 Kempsmith plain.
Pipe machine, 6″ Merrill.
Rotary shear, No. 14 Pettingell 30″.
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Welder, A. EF Type MW-4.
Welders, No. 10-A Thomson, (5).

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28"x10' Niles, q. c. g.
21½"x8' LeBlond.
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18" x 7' Chard, d. b. g., semi q. c. g.
18"x 6' South Bend, plain change.
18"x6' to 8' lathes, (6).
16"x 6' American, q.c., pan bed, t.a.
15"x 8' Sidney, q. c., d. b. g., t. a.
14"x 6' Springfield, latest type, tool room type, t. a.
14"x 6' Lodge & Shipley, patent head, taper, pan bed.
14"x8' Lodge & Shipley, q. c.

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14"x 6 Warner & Swasey.
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26" Aurora, sliding head.
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21" Aurora, b. g., p. f.
20" Sibley, back geared.
20" Prentice, plain, (3).
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No. 5 Brown & Sharpe vertical.
No. 3 Brown & Sharpe, plain, cone type.
No. 3 Hendey, q. c. g.
No. 1 Van Norman hand miller.
No. 3 Becker-Brainard, new model, q. c. g., vertical attachment.
No. 5-C Becker vert., rotary table.

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48"x48"x12' Gray, 2 heads.
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28" Woodward & P., crk., gear box.
48" Morton draw-cut shaper.
30"x30"x8' American, 1 head.
15" Lodge & Davis shaper.
21" Milwaukee, b. g.
24" Gould & Eberhardt, b. g.

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24" Bullard, rapid production.
Boring mill, car wheel, 60" Newton.
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Boring, drilling and milling machine, 17½" Bement-Miles horiz.
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6" Cox, quick opening dies.
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Arbor press, No. 8 Greenerd, 36" bet. columns.
Centering mche., 5" Whiton, dbl. sp.
Cold saw, No. 6 Nutter & Barnes.
Elec. hoist, 1-ton Link Belt, 2 ph. a.c.
Electric hoist, 1-ton Shepard, 220 v., d. c., (2).
Grinder, No. 8 Diamond, double end, heavy type, (3).
Generator, No. 100 Oxweld acetyl.
Grinder, 13½"x5' Landis universal.
Grinder, disc, No. 17 Besly.
Grinder, No. 7 Gardner disc, ball bearing, complete.
Grinders, several dbl. end electric.
Hammers, 15, 25 & 40 lbs. Bradley helve.
Hammer, 60 lb. Hotchkiss.
Hammer, 50 lb. Little Giant, belt dr.
Hammers, 60 lb. Bellefonte upright, 2.
Keyseater, Morton 18" stroke.
Keyseater, No. 4 Catlin, m. d.
Punch press, No. 10 Bliss mult.

Herman L. Winterer—Continued.

Punch or gate shears, 72" Cleveland multiple, 15" throat.
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Punch press, No. 2 Cons., flywheel.
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Punch & shear, No. 4 Long & A., double end, 24" throats.
Punch & shear, Oeking combination, cast steel frame, cap. 1½" in 13/16".
Riveter, 3/16" Grant, on column.
Riveter, air, 6' gap Allen, cap. 1½".
Riveter, air, 6' Allen, cap. ⅝".
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Saw, Q. M. & S. No. 4-B universal, 32" blade.
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Shear, 8' Ohl, No. 20 ga.
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Slotter, 3½" Rhodes vertical.
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Tooth rounding machine, S. & S.

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Drill, 36" New Haven.
Drill, ⅝" Sipp h. s., b. b.
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Gear hobber, 24" Schuchardt & S.
Gear cutter, 6-A Cincinnati.
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Grinder, 6x32 Norton plain.
Grinder, No. 65 Heald cylinder.
Grinder, 24" Norton snagging.
Grinder, 14" Blount wet tool.
Grinder, No. 8 Besly disc.
Grinder, No. 14 Besly disc.
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Lathe, 15"x6' Rockford, semi q. c.
Lathe, 14"x6' Hendey.
Lathe, 18"x6' Lodge & Shipley.
Lathe, 3½x60 Lo-Swing.
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Miller, No. 2-B B. & S. pl., s. p. d.
Miller, No. 34 Ohio plain.
Press, No. 29 Swaine, o. b. i.
Press, No. 4 Toledo, o. b. i.
Press, No. 5 Toledo, o. b. i.
Shaper, 18" Ohio.
Shaper, 16" Smith & Mills.
Shaper, 20" Smith & Mills.
Shaper, 20" Cincinnati.
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Turret lathe, No. 6 W. & S., p. f. to carriage.

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Boring mill, 42" Bullard, b. d.
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Riveter, Allen, 66" throat, 15" gap.
Riveter, stake, No. 6 Whiting, 48" thrt.
Rolls, angle bending, 6x6x½" K. & R.
Rolls, bending, Niles 10"x½", m. d.
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Saw, hack, 13"x16" Peerless.
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Shear, bevel, Lennox ½".
Shear, guil. No. 0 H. & J., 1½" round.
Shear, guil. No. 3 H & J., 2½" square.
Shear, rot., No. 110½ Bliss, 3/16" cap.
Shear, rotary, No. 3 Quickwork ½".
Shear, rotary, No. 6 Quickwork ⅝".
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Testing machine, 100,000 lbs. Riehle.
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1—8'x5" portable boring bar at little more than half price.

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10'—16' Betts, extension type.
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52" Niles-B'-P. turret & plain head.

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6" bar Barrett cylinder borer.
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500 lb. Bradley, upright helve.
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42"x36' Bridgeford, geared head.
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72"x40' Sellers, heavy type weight 50 tons, belt or motor drive.

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No. 2B Brown & Sharpe, heavy.
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42"x42"x26' N. B. P., rev. m. d.
42"x42"x14' Putnam, 4 h. p. dr.
36"x36"x30' N. B. P., rev. m. d.
36"x48"x16' Niles-Bement-Pond.

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No. 2 Hillis & Jones 20" throat.
Angle shear, H. & J., 6"x1" cap.
No. 4 Hillis & Jones double, 48" throat, m. d.
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Cold saw, 50" Espen-Lucas, m. d.
Core wire straightener, ½" to 4/16".
Compressor, 8"x10" Sullivan.
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Gear cutter. No. 2 Bilton.
Grinder, 84" Diamond surface.
Hydraulic forging press, 1200 tons.
Miller, No. 3 Cincinnati universal.
Planer, plate, 25' H. & J. No. 6.
Planer, rotary 30" Cleveland.
Plate joggler, ½" capacity.
Press, wheel, 150 ton Cardwell.
Radial drill 5' N. B. P. semi-universal, s. p. d.
Shaper, 16" Cincinnati.
Shaper, 16" Kelly.
Upsetters, 3", 4" and 6".

Contractors' equipment, hoists, mixers, etc.

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United Mchry. & Supply Co., 4640 Newberry St., St. Louis, Mo.

Drill, 20", camel back.
Lathe, 3A W-S, turret.
Miller, No. 1½ American, plain.
Miller, rectangular arm, No. 4.
Presses, Kelly, good shape.
Press, 60" Parson gearless beam.
Returning tool, No. 1 Sawyer Web.
Rolls, corrugating, 48".
Shaper, 20" American, used 6 mos.
Tool grinder, Wells, like new.

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Foster Machinery Company, 10203 Quincy Ave., Cleveland, O.

Band saw, 24" woodworking.
Bolt cutter, 1½" Acme.
Boring mill, vertical, 42" Bullard.
Lathe, 16"x6' Monarch.
Miller, No. 00 Brown & S., hand.
Press, No. 3 Stiles.
Punch, EF Cleveland, 72" thrt., m.d.
Riveter, High Speed 2A.
Shear, 54"x¼" Bertsch, 15" throat.
Shear, alligator, Canton, cap. 1½" sq.
Shear, 36"x18" gap, foot.
Trolleys, I-beam, 1 & 2 ton.

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Rare bargains—Liquidation from our tool room. Modern, up-to-date tools, guaranteed in fine condition. It will pay you to consider these tools before making a purchase.
Drill press, Champion 20", back geared. Good condition.
Drill press, 4-spindle, high speed, (2) Fine condition.
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Engine lathe, brand new, LeBlond heavy, 24"x10', pan bed, regularly equipped. Factory price on this tool about $2,700. We are offering it at substantial reduction in price.
Engine lathe, Sidney heavy duty, 17"x8', regular equipment. A-1 condition.
Grinder disc, Besly 20", dbl. end spdl. with table press, all comp. Like new.
Grinder, tool and cutter, No. 2 Ohio, Oesterlein universal. Cond. like new.
Keyseater, Davis No. 1, regular equipment. Like new.
Miller, hand, No. 25 Becker, complete. Like new.
Millers, 7-H Becker Mfg. Condition like new.
Miller, hand, No. 6 Whitney. Fine condition.
Milling machines, Gooley & Edlund, Briggs type. A-1 shape.
Milling machine, No. 0 LeBlond, plain, 4-step cone, for 2½" belt, table 8x34". Fine condition.
Milling machine, No. 4 LeBlond, heavy duty, full universal, with full universal equipment. In A-1 condition.
Milling mche., No. 34 Ohio, Osterlein, pl., table 11½x58", 4-step cone for 3" belt, b. g., q. c., all power feeds to tbl., regular equipment. Fine condition.
Screw machine, hand, Brown & Sharpe, No. 4, wire feed, standard machine. Like new.
Shaper, Cincinnati, back grd., 20", 4-step cone drive. A-1 condition.
Shaper, openside, 26" stroke. A-1 condition.
Turret lathe, flat, Cincinnati-Acme, geared head, 3½x36", with chucking equipment. 95% to 98% new condition.
Turret lathe, 24" Gisholt, 6¾" hollow spindle, 2-step cone, back geared, friction head, std. machine. Late type. In A-1 condition.
Turret lathe, J. & L., geared head, geared feed, 2½x24", with bar equipment. Fine condition.
Turret lathe, Warner & Swasey No. 4, standard machine. Fine condition.
Turret lathe, Warner & Swasey 16", wire feed, auto. chuck, 3-step cone, back grd., friction head, cross slide, 6-hole hex. turret, good assortment of collets. A-1 condition.
These tools are in very fine condition—require no rebuilding and can be inspected under the belts, if desired. They are the kind that will suit the careful buyer, and prices are very attractive. Please send us your inquiries.

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C. I. Wroe Co., • • 11 Park Place, New York, N. Y.

Brand new, and well over 90% new, machines.

Automatic, Gridley, 2¾", four spindle.
Boring, drilling and milling machine, Giddings & Lewis No. 32, horizontal.
Drill, 3 spindle, Barnes, all geared.
Drilling machines, ball bearing, sensitive, 1, 2, 3 and 4 spindle, in original shipping crates.
Grinder, 12x24 Cincinnati, plain.
Grinder, 20x96 Norton roll.
Miller, slab, 54"x36"x16' bed, 4 heads, adjustable rail, Ingersoll.
Turret lathe, No. 6 Warner & Swasey, heavy duty, cut-off with p. f. and p. f. to turret.

FOR SALE BY

Marr-Galbreath Machinery Co., 58 Water St., Pittsburgh, Pa.

Bolt cutter, 1½" Morgan, double hd.
Bolt cutter, 1½" Acme, triple head.
Boring mill, 24" Bullard, side hd. m.d.
Boring mill, 42" Bullard, 2-heads.
Boring mill, 16' to 36' Niles extension.
Boring machine, Rockford No. 2 horizontal, 3½" bar.
Bulldozers, Nos. 2, 4, 5, 6 & 28, W.-W.
Channeling mach. No. 3C, K&R.
Derrick, steel, stiff lg 15-ton, 60' boom.
Drill grinder, "WPEL," 3/60/220.
Drill, 22" Barnes, sliding head, b.g.
Forging mach., 3" Acme, steel, m. d.
Forging and rivet header, 1" Ajax.
Furnace, No. 27 Stewart, gas, 6"x12" door.
Gang slitter, 35" cap., feed roll.
Gear cutter, No. 6 Brown & Sharpe.
Grinder, cylinder, Hoenig, portable.
Grinder, No. 18-D Rowbottom.
Grinder, No. 24 Landis, 16"x48".
Grinder, No. 60 Heald, 19" arm.
Hack saw, Atkins, cap. 8"x8".
Hack saws, No. 5 Marvel.
Hack saw, 12x15" Racine, g.b., m. d.
Hammer, 2500 lb. Chbg., s. f. steam.
Hammer, 8000 lb. Chbg. dbl. frame.
Hammers, stm. s. f. 600, 1100, 1500 lbs.
Hammers, 40 lb. and 80 lb. Bradley.
Keyway cutter, 24" Morton, cap. 2½".
Lathe, 18"x8' L. & S. quick change geared, double frame.
Lathe 10'x6½' Myers, chuck att.
Lathe, 24"x14' Porter, plain change.
Lathe, 26"x10' Walcott, q.c.g., d.b.g.
Lathe, 24"x10' Putnam, taper attach.
Lathe, 24"x12' Sch. & Boye, 3" bks.
Lathe, 32"x16' Bridgeford, gr. hd.
Miller, vertical "C" Becker, s. p. d.
Miller, No. 2 B. & S. univ., index hd.
Milling mach., No. 3-B. Milwaukee.
Milling mach., Oesterlein, univ. No. 2
Milling mach., No. 0., Kempsmith universal.

Milling mach., duplex Knight, table 8½"x32".
Motor, 8½ h.p. 220 v., d. var. sp.
Oil separators, ¾ & 1½ bu. cap.
Pinion cutter, No. 3 S. & C. 1"x1".
Pipe machine, 10" E. C. & B.
Pipe machine, 6" Oster, with dies.
Planer, 48"x48"x16' Pond, 4-hds., m.d.
Planer, 24"x24"x6' Gray, 1-head.
Press, No. 52 Ferracute, punch, m.d.
Punch, 30" thrt., 1"x1" m. d., s. e.
Punch, coping, steel plate, 13" thrt. 36" die space, 2 holes 1"x1", m. d.
Radial drill, 2½' Fosdick, t. a.
Radial drill, 3' Dreses-Mueller.
Radial drill, 4' Dreses Simplex.
Riveter, Allen jaw, 36" cap. 1½".
Riveter, ½" Shuster rotary, belt.
Riveter, 80 A. Grant, ½" cap. belt.
Roll, angle, No. 24 K. & R., cap. 6x6x1, m. d.
Roll, bending, 6'x¼" Bertsch, d. e.
Saw, cold, No. 11½ Higley, cap. 3" rd.
Saw, cold, Wagner, cap. 16" blade.
Saw, band, metal, 30" Wright, cone.
Saw, Burke, 12" blade, capacity.
Seamer, No. 305 Toledo, dbl. 12x14"
Screw mach., 8"&10" P.&W. pl., w.f.
Shaper, 16" Am., b. g., crank.
Shaper, 24" Cincinnati, b. g., crank.
Shaper, 24" Niles-Bement-Pond, cr.
Surface plate, 48"x18"x2-8".
Shear, rotary, Quickwork ¼" ga., 36" throat, with 60" circl. attachment, motor, 3 ph., 60 cy. 220 v.
Turret lathe, 13" Gisholt, 2¾" h. s.
Turret lathe, 42" x 30", B. & O., geared head, m. d.
Turret lathe, 28" Gisholt, 3½" h.s., t.a.
Turret lathe, 2"x24", J. & L., s. p. d.
Turret lathe, 18" W.&S. friction hd.
Vise, 8" Columbian, plain.
Wheel press, 60 ton, 30" wheels.

WOODWORKING MACHINES.

Borer, Smith post, No. 451.
Cut-off saw, sw., F.&E. No. 75, m.d.
Jointer, Woods, 8".

Lathe, 18"x12', F &E., iron bed.
Lathe, F.&E. No. 25 auto bk. kf. ga.
Saw filer, band, Wardwell, "K".

USED AND REBUILT MACHINERY

FOR SALE BY

J. E. Haetten & Co., Inc., - 50 Church St., New York, N. Y.

Automatic, ⅜"-4" Model B Cleveland, automatic	$ 100.
Blue printer, 45" Revolute, 110 d. c.	400.
Boring mill, 36" Bullard rapid production, serial 4330, excellent cond.	1200.
Boring mill, 84" Betts vertical with motor, 77" table	1800.
Die sinker, No. 2 Pratt & Whitney compound table	500.
Hammer, 1600 lb. Waterbury Farrell, board drop	900.
Hammer, 800 lb. Billings & Spencer, board drop	650.
Hammer, 600 lb. Billings & Spencer, board drop	550.
Hammers, 50-75-100 lb. Bradley upright compacts	$250 to 300.
Lathe, 14"x8' Prentice l. c. g., good order, rise and fall rest	100.
Miller, No. 2V Potter & Johnston, continuous, 98% new	1200.
Miller, No. 12 Niles-Bement-Pond vertical, 60" rotary table	1500.
Nailing machine, 12 spindle Doig with clincher	400.
Oil separator, 16" American, centrifugal, belt drive	50.
Planer, 30"x30"x7' New Haven, 1 head, belt drive	250.
Planer, 96"x96"x20' Pond, 4 heads, motor drive	5000.
Press, No. 23 V. & O. geared, Stiles type, 1½" stroke, A-1	550.
Press, No. 24 V. & O. geared, Stiles type, 2" stroke, A-1	650.
Press, No. 56 Toledo, flywheel, s. a., 4" stroke, side shear	1100.
Press, No. 57 Toledo, single geared s. a., 6" stroke, side shear, A-1	1500.
Saw, 6x6 Racine high speed power machine	80.
Shaper, 16" Smith & Mills	200.
Turret, No. 1 Warner & Swasey hand operated, good condition	100.

FOR SALE BY

Brownell Machinery Co., - 150 Pine St., Providence, R. I.

BORING MILLS.

51" Bullard vertical, 2 heads.
44" Bullard maxi-mill, 48" cap.
No. 1 Cleveland horizontal.

DRILLS.

5' Prentice radial, s. p. d.
25" Weigel, sliding head.
23" Prentice.

GRINDERS.

No. 11 B. & S. plain, 4x30.
No. 1 Norton tool and cutter.
No. 2 B. & S. cutter & reamer.
20" Blount wet tool.

LATHES.

30"x20' Fitchburg.
20"x10' Monarch, q. c. g.
18"x8' Reed, q. c. g., taper.
16"x8' Reed, b. g.
14"x8' Hendey tool room, taper, draw-in.
B.& S.dbl.spd. polishing & finishing.

MILLING MACHINES.

No. 4-A B. & S. full universal.
No. 1½ B. & S. universal.
No. 20 Oesterlein universal.
No. 3 G. H. LeBlond plain.
No. 2 B. & S. vertical.
No. 4-B Becker vertical.
Whitney hand.

PLANERS AND SHAPERS

36"x36"x10' Woodward & Powell, heavy, 3 heads, m. d.
24"x24"x6' Whitcomb.
17"x17"x4' Whitcomb.
16" Ohio, heavy duty, new.
20" Ohio, heavy duty, new.

WOOD-WORKING MACHINERY

Band saw, 36" American, motor dr.
Band scroll saw, No. 50 F. & E., 36".
Borer, No. 1 F. & E. sgl. spdl. vert.
Grinder, No. 14 American, m. d.
Jointer, 18" Crescent.
Jointer, No. 316 F. & E. 16".
Lathe, 12x6 American, motor head-stock.
Planer, 20"x8" L. Power sgl. surf.
Surfacer, No. 224 Fay & Egan single, double belted.

MISCELLANEOUS.

Band saw, 12" H. & R. metal cutting.
Broaching machine, No. 2 LaPointe.
Chain hoist, 10-ton Yale & Towne.
Filing machine, Thurston.
Gear cutter, No. 3 B. & S. 26x8.
Hack saw, 6x6 Peerless, rebuilt.
Screw mchs., No. 0 B. & S. ⅜" hand.
Screw machine, 3x36 J. & L.
Slotter, 12" Bement-Miles.

FOR SALE BY

A. C. Love Co., • • P. O. Box 789, Huntington, W. Va.

Drill single, Foote-Burt, 10x36" table.
Grinder, Oakley No. 2 tool and cutter.
Lathe, axle, Bridgeford, motor drive, new.
Lathe, 18"x14' American, quick change.
Lathe, 24"x10' Lodge & Shipley, quick change.
Miller, Kempsmith No. 2 universal with dividing head and cutters; used very little.
Press, deep drawing, Bliss No. 3½, toggle.
Punch, single end, Wickes, 48" throat, motor drive.
Shear, alligator, Beloit No. 47.
Shear, slitting, Scully rotary, ⅜" capacity.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,
1211-1223 N. 12th St., St. Louis, Mo.

LATHES.

15"x 6' Monarch, q. c. g.
15"x10' Cisco.
16"x 8' Cleveland tool room.
18"x 8' LeBlond, q. c. g.
26"x12' Putnam.
20"x20' LeBlond.
22"x12' Mueller, q. c. g., taper att.
38"x14' Pond, triple geared.
60" New Haven turning, 7' centers.
18' Wickes pit lathe, extra heavy.

MILLING MACHINES.

No. 3 Rockford, hand.
No. 1½ Brown & Sharpe.
No. 3 Cincinnati plain.
No. 5 Brown & Sharpe.
No. 4 Cincinnati plain.
Owen duplex.
No. 23 Becker.
No. 12 Kempsmith.
37"x30"x8' Slab miller.

DRILLING MACHINES.

20" Champion.
22" Barnes, sliding head.
3-spindle Allen, h. s.
32" Mechanics.
42" New Haven.

PLANERS AND SHAPERS.

72"x48"x16' Gray planer.
24"x24"x 6' Powell planer.
30"x30"x8' Belmer planer.
42"x42"x12' Powell planer.
48"x48"x16' Niles, 2 heads.
20" Gould & E., b. g. crank shaper.

GRINDERS.

No. 6—26" Besly disc.
26" Gardner disc.
No. 50 Gardner disc.
8" Heald rotary, magnetic chuck.
10"x72" Brown & Sharpe plain.
No. 1 Diamond surface.
No. 1 Fraser surface.
5"x18" Ott.
10"x18" Sterling universal.

SCREW AND TURRET MACHINES.

2"x24" J. & L., geared head.
3"x36" J. & L., geared head.
1½" Acme.
No. 1 Pratt & Whitney.
No. 6 Warner & Swasey.

PRECISION TOOLS.

No. 1 Dayton swaging machine.
No. 3½—7" swing Stark bench lathes.

ELECTRIC TRAVELING CRANE.

10 ton electric traveling crane, 42' span.

MISCELLANEOUS.

Air compressors, (14).
Belt lacer, 12" Peerless.
Boring mche., hor., No. 2 P. & H.
Boring mche., hor., No. 3 Niles.
Boring mill, 54" Baush, 2 heads.
Boring mill, 84" Niles, 2 hds., h. d.
Furnaces, Stewart cyanide hardening
Hammer, Bradley 60 lb., belt power.
Hammer, Morgan 600 lb. steam.
Hammer, 800 lb. steam.
Hammer, 2000 lb. Niles-B. steam.
Hammer, 2500 lb. Chamb. steam.
Metal saw, Espen-Lucas.
Pipe mche., 8" Bignall & Keeler.
Press, No. 16 Stoll inclinable.
Punch, 42" thrt., Cleveland, s. e.
Punch, 48" thrt. Hillis & Jones.
Punch, 36" throat, single end.
Shear, Lennox, ¼" rotary bevel.
Shear, 8' Morgan gate shear.
Slotter, 13" Niles.
Welder, butt, 200 amp.
Welder, spot, Toledo 36" reach, 26k.w.

FOR SALE BY

Syracuse Supply Company, 314 W. Fayette St., Syracuse, N. Y.

Guaranteed NEW MACHINES in original crates at prices below list:

Automatic, 2⅜" Gridley, single spdl.
Pipe machine, No. 70 Forbes.
Screw mchs., No. 4 W. & S., g. f. h., (2).
Straightener, No. 2½ Corey.

Exceptional values in USED TOOLS:

Automatic, 1½" model A., Cleveland.
Drill, 4' Bickford radial.
Drill, 6' American univ. radial.
Drill press, 4-spdl. National sensitive.
Drill, 20" Fairbanks.
Drill press, 22" Prentice, rebuilt.
Grinder, 24" Safety Emery Wheel Co. snag grinder.
Grinder, Taylor & Fenn 20".
Lathe, 16"x 8' American, geared head, rebuilt.
Lathe, 16"x10' American.
Lathe, 20"x12' Reed.
Lathe, 8x60 Fitchburg lo-swing.
Miller, No. 5 Becker vertical.
Miller, Oesterlein universal.
Millers, Wisconsin hand, (3).
Planer, 30"x30"x16' L. W. Pond.
Planer, 60"x60"x22' Niles.
Radial, 5' Pond.
Shaper and slotter, No. 1 Rhodes.
Thread miller, No. 12 Lees Bradner.
Tilted turret, No. 6 Wood.
Turret lathes, No. 4 Foster, (2).
Turret lathe, No. 3 Cincinnati Acme.
Turret lathe, 2½x26 Pratt & Whitney.
Turret lathe, 3x36 Jones & Lamson.
Turret lathe, 2x24 Jones & Lamson.
Turret lathe, 21" Gisholt.
Turret lathe, 24" Steinle.

FOR SALE BY

Clinton Machinery Co., - 126-128 S. Clinton St., Chicago, Ill.

MILLING MACHINES.

No. 3H LeBlond univ. fully equipt.
No. 2B Kearney & T. univ. compl. d. h. vise, slotting attach. rot. tbl.
No. 20 Van Norman duplex compl.
No. 00 Brown & Sharpe (2).
No. 3 Ohio plain.
No. 2 Brown & Sharpe plain (2).
Chicago hand miller with d. h.
No. 0 Bristol & No. 6 Whitney.
Pratt & Whitney & Hardinge bench.

LATHES.

16"x8' Prentice q. c. g., complete.
16"x8' Monarch q. c. g., complete.
16"x6' Canedy-Otto s. q. c. g., compl.
14"x8' Monarch q. c. g., complete.
14"x7' South Bend, complete.
14"x6' Hendey complete, q. c. g.
14"x6' Bradford q. c. g., complete.
11"x5' Seneca Falls, complete.
9"x3' South Bend, complete.
Stark and Hardinge precision lathe.

SCREW MACHINES AND PIPE MACHINES.

2⅜" Oliver turret lathe, like new.
No. 4 Bardons & Oliver, p. f., collets.
No. 3 Foster w. f., p. f., collets.
No. 2 Warner & S. g. f. h., p. f.
No. 1 Warner & S., w. f., collets.
No. 1 Bardons & O., w. f., collets.
1" cap. Hardinge, bench.
2½" Merrill, with set of dies.

DRILL PRESSES.

26" Barnes with tapping att., s. h., b. g., p. f. and automatic feed.
25" Rockford b. g., p. f., a. f.
20" Rockford w. & lever feed, (2).
24" H. & W., s. h., h. s., b. b. (2).
4 spindle Barnes gang drills.
No. 1 Knight milling and drilling.
4-sp. Henry & Wright, h. s., b. b.

SHAPERS.

26" Stockbridge, b. g. crk., like new.
24" Smith & Mills b. g. crank.
20" Gould & Eberhardt, s. p. d., crk.
20" Milwaukee b. g., crank.
16" Milwaukee b. g., crank.
7" Rhodes, crank.

PUNCH PRESSES.

No. 50 Perkins b. g., o. b. i.
No. 4 Consolidated b. g., o. b. i.
No. 4 Consolidated, o. b. i., 5" str.
No. 4 American Can, o. b. i.
No. 2 American Can, o. b. i.
No. 00 Verson, bench.
No. 3 Swaine, o. b. i.
No. 3 Consolidated b. g., o. b. i.
No. 2½ Toledo, o. b. i. (2).
No. 1 American Can, o. b. i.
No. 2C Consolidated. o. b. i.
No. 8 Bliss, bench, (2).

MISCELLANEOUS.

Grinder, surface, No. 2 Brown & S.
Grinder, tool cutter, No. 2 B. & S.
Hammers, No. 1½B, high speed, (3).
Keyseaters, Nos. 1 & 2 Davis.
Miller, No. 4B Becker, vertical.
Shear, square power, 30".
Spinner, Grant, ⅜" capacity.
Spot welder, Taylor, 7½ k. w.
Tapping machine, R. & S., ⅝" cap.
Grinders and Kick Presses.

FOR SALE BY

A. M. Stoehr Machinery Co., 418 Mid-City Bank Bldg., Chicago, Ill.

Auto. sc. mch., B. & S. No. 00 $ 375.
Auto. sc. mch., B. & S. No. 0 425.
Auto. sc. mch., B. & S. No. 1 525.
Bolt cutter, 3-spdl. Acme, 1"... 350.
Boring mill, 12' Niles..... 2500.
Drill, 42" Bickford radial..... 325.
Hammer, 100 lb. Beaudry, belt drive ..... 225.
Hand sc. mch., B. & S. No. 1 125.
Hand sc. mch., P. & W. No. 2 150.
Miller, B. & S., motor drive.. 275.
Miller, 70"x22' Sellers planer type, 5 heads, heavy duty.... 6000.
Planer, 56x56x12' Cincinnati...$ 900.
Press, No. P-4 Ferracute, 5500 lb..... 325.
Press, No. 34 Bliss, arch..... 250.
Press, No. 16 Bliss, horning... 200.
Press, R. & K., dbl. crank, 3½" bet. uprights, roller feed, 2½" stroke, wt. abt. 8000 lbs..... 525.
Riveter, Allen, ¾ cap., at 80 lb. pressure, 24" reach..... 150.
Riveter, No. 4-A High Speed. 275.
Riveter, No. 5-A High Speed. 325.
Saw, 9x9 Sterling, high speed.. 85.

All the above guaranteed good serviceable condition; write us for other bargains.

FOR SALE BY

Norton-Broadway Mchy. Co., Sixth & Baymiller Sts., Cincinnati, O.

Ask for our New Catalogue.

BORING MILLS.

36" Bullard, turret and side head.
52" Bickford, 1 head.
42" Gisholt, 2 heads.
2 Horizontal machines, knee type.

LATHES.

14"x 6' American, q. c., (2).
18"x 8' Hollingsworth, new.
21"x12' LeBlond, geared head.
32"x12' Prentice, raised 42".
15"x 6' Willard, geared head.
18"x30"x10' LeBlond, gap, q. c.
24"x12' Boye & Emmes, q. c.
48"x33' Niles

GEAR CUTTERS AND HOBBERS.

No. 26 Brown & Sharpe.
No. 4—36" Brown & Sharpe.
60"x20" Cincinnati.
30" Gould & Eberhardt.
No. 12 Barber-Colman.

MILLING MACHINES.

2B Brown & Sharpe, single pulley.
No. 4 Brown & Sharpe universal.
Type AB Becker vertical.
No.2-B Kearney & Trecker, vert.att.
No. 4 Cincinnati universal, (3).
P. & W. and Brown & Sharpe hand.

SHEARS AND PRESSES.

No. 3 Crosby, s. s., 1½" stroke.
No. 6-A Willard, inc.
No. 73 Billings & Spencer, s. s.
No. 3 Toledo, inc., (2).
No. 19C Bliss, inc.
15 ton Lucas hor forcing press.
48" Long & Allstatter shear, ¼" and lighter.
6' Bertsch Shear, 18 gauge.
No. 30 Long & Allstatter, weight 2200 lbs., inc. new.
No. 30-A Bliss, motor drive.
6' Robinson brake, 10 gauge.
No. 45 Bliss, s. s.
Niagara horning press.
No. 1 Long & A. punch and shear.

SHAPERS.

15" Ohio crank; 15" Potter & Johnson crank; 16" Cincinnati, crank, 16" Queen City, crank, 20" Smith & Mills, single pulley; 24" Queen City, single pulley. 25' Smith & Mills crank; 28" Hollingsworth, single pulley.

PLANERS.

24"x8' Pond, 2 heads.
33"x10' Cincinnati, 2 heads.
24"x8' Gray, one head.
30"x16' Gray, two heads.

GRINDERS.

No. 2 Oakley universal cutter.
LeBlond cutter and tool grinder.
Wilmarth & Morman cutter & tool.
10"x72" B. & S. cylindrical.
6"x30" Webster & Perks cylindrical.
18"x96" Norton plain cylindrical.

MISCELLANEOUS.

Hammer, 90 lb. Williams & White.
Gridley ¾ auto. 4 spindle (3).
2½" Gridley automatic, 4 spindle.
2 Spindle J. & L. geared head.
6 Spindle New Britain automatic.

Send for the new catalogue.

FOR SALE BY

J. Bleser Mfg. Co., 16th & Madison Sts., Springfield, Illinois

Air compressor, 12x12 Laidlaw-Dun-Gordon, and 30 h. p., 575 r. p. m., 3-phase electric motor: all for $500.
Lathe, engine, 16x8 G. & K., q. c.
Lathe, 14"x6' Monarch, q. c.
Miller, No. 2 Hendey universal.
Miller, Cinti, No. 3 univ., O. type.
Millers, bench, No. 3 Burke; Rockd.
Radial drill, 5' Bickford.
Shapers, Smith & Mills, 16", 12".

FOR SALE BY

Bennett Machinery Co., 30 Church St., New York City

Boring machine, 4" Betts, knee type.
Boring mill, 51" Bullard, 2 heads.
Gap lathe, 18/36"x10' LeBlond.
Lathe, 28/48"x18' McCabe, dbl. spdl.
Lathe, 28"x14' S. & B., taper att.
Lathe, 20"x15' Reed, 11' centers.
Lathe, 18"x10' Flather, q. c. g.
Lathe, 18"x8' Greaves-Klusman, grd. hd., q. c. g., sgle. pulley, late type.
Pipe mche., 4" Bignall & K., m. d.
Pipe machine, 8" Jarecki, 2½-8".
Shapers, 24" G. & E.; 26" Juengst.

FOR SALE BY

Reliance Machinery Sales Company

1405 Brighton Road, N. S. Pittsburgh, Pa.

Automatics, Nos. 52 & 55 Acme.
Blower, No. 5 Champion, 6¾" outlet.
Blower, Amer. pressure, 461 cu. ft.
Bolt cutter, ⅜" Acme, class "A," 2-sp.
Bolt cutter, 1½" Acme, double head.
Bolt cutter, 2½" Acme, single head.
Boring mill, No. 44 D. & H., floor type, 3½" bar.
Boring mill, Niles horiz., 4½" bar.
Boring mill, 34" Colburn, 1 head.
Boring mill, 42" Bullard, 2 heads.
Boring mill, 51" Niles, 2 heads.
Boring mill, 62" Bullard, 2 heads.
Bulldozer, No. 4 Williams & White.
Car wheel borer, 42" Ridgeway.
Cutting-off machine, 6 Hurlburt-R.
Brake, 48" Keane, capacity ½".
Broaches, Nos. 3 and 4 LaPointe.
Buffers, 10 h. p. 220-3-60, 3600 r.p.m.
Drills, 26" Barnes, sliding head.
Drills, 36" Snyder, sliding head.
Gear cutter, 36"x10" G. & E., s. p. d.
Gear cutter, No. 13 Brown & Sharpe.
Grinder, Oliver drill, 4" cap., m. d.
Grinder, w.p.l. New Yankee, cap. 2½".
Grinders, Nos. 11 & 12 B. & S. pl.
Grinder, 12"x24" Modern plain.
Grinder, No. 16 Besly, double disc.
Hammer, 2-A High Speed, m. d.
Hammer, 80 lb. Bradley cush. helve.
Hammer, 300 lb. Bradley upright.
Keyseater, No. 1 Davis, cap. 1/16 to 1"
Keyseater, No. 3 Mitts & Merrill.
Lathe, 12"x 6' Seneca Falls, q. c. g.
Lathe, 12"x10' Davis tool rm., q.c.g.
Lathe, 14"–28" Fay & Scott gap.
Lathe, 14"x 6' Seneca Falls, q. c. g.
Lathe, 16"x 8' Hamilton, q. c. g.
Lathe, 18"x10' W.-B., g. h., s. p. d.
Lathe, 20"x10' Hendey, g. h., m. d.
Lathe, 20"x12' Hendey, tie bar.
Lathe, 24"x12' Boye & Emmes, q.c.g.
Lathe, 30"x12' Boye & Emmes, q.c.g.
Miller, No. 1 Knight drilling.
Miller, No. 3 Kempsmith plain, v.a.
Miller, No. 4 Hendey plain, s. p. d.
Miller, Gooley & Edl. Briggs type.
Motor, 5 h. p. Wagner, 220-1-60.
Pipe machine, ½" to 2" Williams.
Pipe mche., Jarecki 1½" to 6", m. d.
Pipe mche., E., C. & B., 2½" to 8".
Pipe machine, Merrill, 2½" to 12".
Press, No. 19 Bliss o. b. i., 2" stroke.
Press, 30-ton Lucas forcing.
Press, Ferracute DD2, o. b. i., cam.
Press, No. 54 Toledo trimming.
Planer, 20"x20"x4' New Haven.
Planer, 30"x30"x12' Gray, 1 head.
Planer, 36"x36"x8' Cincinnati, 1 hd.
Planer, 48"x48"x12' Betts, 3 heads.
Press, No. 175 Consolidated, 3½" str.
Press, No. 5½ Consolidated, o. b. i., geared, 3" stroke.
Punch, Wickes, 48" thrt., cap. 1½"x1".
Radial drill, 3' Fosdick, cone drive.
Radial, drill, 4' Bickford, g. b., s.p.d.
Radial drill, 6' Bickford plain.
Saws, No. 5 Marvel high rpd., 6x6, (2).
Saw, Racine 6x6 high speed, sp. box.
Saw, 9"x9" Peerless high speed.
Saw, American metal swing, m. d.
Shaper, 20" Steptoe b. g. crank.
Shaper, 24" Cincinnati, b. g. crank.
Shear, 96"x16 ga. Stoll squaring.
Shear, 120"x¼" Garrison squaring.
Tapper, ½" Webster & Perks, 1-spdl.
Tapper, 1½" Webster & Perks, 2-spdl.

Our warehouse is full of bargains. What have you for sale?

FOR SALE BY

Scott-Bansbach Machinery Co., 130 S. Clinton St., Chicago, Ill.

Guaranteed Used Tools.

Auto. sc. mch., B. & S. No. 19. $550.
Auto. sc. mch., B. & S. No. 00. 500.
Auto. sc. mch., B. & S. No. 00. 450.
Auto. sc. mch., B. & S. No. 0... 550.
Auto.sc. mch.,Cinti.5-sp.,¾"cap. 950.
Bolt cutter, 2" dbl. hd. D. & H. 300.
Boring mill, Colburn vert. 30". 350.
Boring mill, Morris horiz., mtr. dr.,with motor, 1-15/16" spdl.,1000.
Drill, Avey 1-spindle, ¾" diam... 200.
Drill, radial, 3½ pl. Fosdick.....1100.
Drill press, No.310 Baker,(5)ea. 250.
Drill press, 24" Minster, heavy. 350.
Gear hobber, 72" J-S,2 d.p.cap. 2500.
Grinder, No. 65 Heald,b. b. spd. 850.
Keyseater, No. 2 Davis, 1" cap. 100.
Lathe, 9"x4' South Bend, pl.ch. 150.
Lathe, 13"x5' South Bend, tool room ..... 530.
Lathe, 14"x8' Flather, q. c..... 250.
Lathe,14"x6' Bradford,comp. tool room equip.,inc. relieving att. 800.
Lathe, 14"x8' Hendey,taper & c. 500.
Lathe, 16"x6' LeBlond, q. c..... 200.
Miller, No. 0 B. & S., plain..... 150.
Miller, No. 2 Becker vertical... 475.
Miller,42" Briggs(Gooley & E.) 500.
Miller, auto. P. &W.No. 12mfg. 600.
Miller, Ingersoll slab 42x36x8.$2250.
Oil separator, No. 400 Curtis.... 300.
Planer,16"x16"x42" P.& W.,1 hd. 275.
Planer, New Haven, 24"x24"x6' 500.
Planer, 32"x32"x8' Pond 1 hd... 750.
Planer,42"x42"x8' Powell, 2 hd. 1000.
Press, No. 1 R. & K.,o. b. i., pl. 125.
Press, No. 5 American Can., o. b. i., plain, 5500 lbs..... 525.
Press, No. 5 Rockford, o. b. i., plain, 7000 lbs..... 675.
Press, grd., No. 8-M American Can, 3" str. 25000 lbs., tie rod. 2000.
Punch, 48" throat Kling, cap. 1"x1" pl. jw..... 800.
Riveter, No. 3A High Speed... 225.
Saw,cold No. 1 Cochrane & Bly 175.
Saw, 6"x6" Peerless high speed 125.
Saw, 9"x9" Peerless high speed 175.
Screw mch. ¾x4" P. & W. comp. 150.
Screw mch. No. 1 W. & S.comp. 125.
Screw mch. No.10 Foster,3"cap. 700.
Shaper, 7" Rhodes vertical, on column..... 150.
Shaper, 16" Rockford, b. g. cr... 425.
Shaper, 20" Cincinnati,b.g.,crk. 525.
Shaper, 26" Stockbridge, b. g. crank, h. d..... 600.

FOR SALE BY

The Randle Machinery Co., 1733 Powers St., Cincinnati, Ohio

Arbor press, Nos. 3 & 7 Greenerd.
Arbor press, Falls screwed type.
Automatic, 4½" Gridley.
Bolt cutter, 1" Acme.
Bolt cutter, 1½" Landis.
Bolt cutter, 2" Acme.
Bolt cutter, 4" Acme.
Boring mills, 40" and 42".
Boring mill, 53" N.-B.-P.
Boring mill, 60" Pittsburgh.
Boring mill, 48" Bickford.
Boring mill, 72" Niles.
Drill, 20" Rockford upright, t. a.
Drill, 24" Superior BG, upright.
Drill, 26" Rockford Mechanics, upr.
Drill, 36" Cinti. Bickford, upright.
Drill, 2½' American plain, g. b.
Drill, 3' American plain, g. b.
Drill,3½' Cincinnati-Bickford pl.,g.b.
Drill, 3½' American plain, g. b.
Drill, 3½' Cisco-Muller plain, g. b.
Drill, 4' Bickford plain, g. b.
Gear cutter, No. 3-H B. & S., 24"
Gear hobber, No. 3 Farwell.
Hack saw, 6x6 Peerless.
Hack saw, 7x8 Atkins.
Hack saw, 12x12 Racine.
Hack saw, 24" Racine.
Lathe, 14"x6' LeBlond, l. c.
Lathe, 16"x6' LeBlond, l. c.
Lathe, 16"x8' American, q. c., t. a.
Lathe, 18"x10' LeBlond, q. c.
Lathe, 24"x10' American, grd. hd.
Lathe, 24"x12' Boye & Emmes, q. c.
Lathe, 24"x12' Lodge-Davis l. c.
Lathe, 24"x14' Pond, l. c.
Lathe, 27"x18' Lodge & Shipley, q.c.
Lathe, 24"x24" Fifield, loose change.
Lathe, 30"x18' H-S-G, q. c.
Lathe, 28"x16' Bradford, l. c.
Milling mach., No. 2 B. & S., univ.
Milling mche., No. 2 LeBlond, unv.
Milling mche., No. 3 LeBlond, univ.
Milling mche., No. 2 LeBlond, pl.
Planer, 36"x38"x16' Gray, 3 heads.
Planer, 30"x30"x16' Gray, 2 heads.
Planer, 30"x30"x13' Cincinnati, 2hds.
Shaper, 14" Steptoe plain.
Shaper, 16" Queen City, c d. or g. b.
Shaper, 20" Queen City, back grd.
Shaper, 24" Cincinnati, back geared.
Shaper, 28" Queen City, g. b.
Shaper, 32" Cincinnati Climax.
Squaring shear, 3/16"x120" Niagara.
Turret lathes, 2½, 3" J & L.
Turret lathe,24"x8' Gisholt, 6¾" bore.
Automatic Lathe,17" new Hamilton.
Wheel press, 200, 250 & 300 tons.

Also large stock of other sizes and types machine tools. Your inquiry solicitted.

FOR SALE BY

Mid-West Machine Tool & Supply Co., Davenport, Iowa

Automatic, ⅜"-1¾" Cleveland.
Automatics, full, No. 2, No. 0 and No. 00 Brown & Sharpe.
Drill, 4-spindle Rockford, p. f.
Drills, 4-spdl., 12" and 14" L. & G.
Drills, 6-spindle Allen, h. s.
Gear cutter, 4" Waltham, (new).
Gear tooth rounder, 12" Ingle.
Grinder, No. 10 B. & S. plain.
Grinders, surface, Nos. 20 and 22. Heald rotary.
Hobber, No. 4 Adams.
Hobbers, Nos. 3 & 12 B. & C.
Miller, No. 13-B B. & S., production.
Radial, 4' American sensitive.
Radial, 4' Mueller.
Screw machines, No. 2 B. & S., p. f.
Turret lathe, 1¼" Acme.

Partial list; send us your inquiries.

FOR SALE BY

The O'Brien Machinery Co., 113 N. Third St., Philadelphia, Pa.

Blueprint machine, single phase.
Boring mill, No. 1½ Beaman Smith horizontal, floor type, 2½" bar.
Die sinker, No. 2 Pratt & Whitney.
Die sinker, No. 3 Pratt & Whitney.
Die sinker, No. 4 Pratt & Whitney.
Drill, 32" Aurora, motor driven.
Drill, radial, 6' Dreses full universal.
Gear shaper, No. 35 Fellows, belt or motor.
Grinder, No. 2 Cinti univ. 12x36.
Hammer, 2000 lbs. Chambersburg, double frame, steam forging.
Hammer, 1500 lb. N.-B.-P., single frame, steam forging.
Hammer, 5N Nazel, m. d., cap. 6x6.
Lathe, 30"x28' Lodge & Shipley, belt, q. c. g.
Lathe, 27"x10' LeBlond, tur. attach.
Lathe, 30"x30' Harrington.
Lathe, 36"x20' Sidney, q. c. g.
Miller, No. 3 Brown & Sharpe universal, table 10x46, dividing heads.
Milling mche., No. 3 Garvin duplex.
Pipe machines, 2", 4", 6", 8" & 12" Oster, Cox, Williams, Eaton-Cole & Burnham and Jarecki makes, belt or motor driven, comp. stock.
Planer, 36"x36"x24', Bement, 4 hds.
Press, No. 73½ Bliss trimming press.
Press, No. 20 Bliss geared.
Press, Chambersburg trimming, mtr. drive, weight 12000 lbs.
Press, No. 37 Niagara, 1100 lb. fly-wheel, solid back.
Saw, 30" Espen Lucas, 8" capacity.
Shaper, 20" Bement Niles, heavy duty, traveling head, one head.
Shapers, 16", 20" and 24" Gould & E.
Shapers, 20" Stockbridge, with speed box, (3).

FOR SALE BY

Fitchburg Grinding Machine Corporation, - Fitchburg, Mass.

LATHES.

LeBlond 14"x6'.
Reed-Prentice 16"x8'.
Putnam 14"x6'.
Hamilton 18"x7'.
Greaves-Klusman 18"x8'.
Perkins threading 21"x10'.
New Haven 32"x12'.

PLANERS.

42"x36"x22' Whitcomb.
32"x26"x16' Whitcomb, 2 heads.
22"x22"x8' Whitcomb.
17"x20"x8' Whitcomb.
30"x30"x8' Powell, 2 heads.

TURRET LATHES.

2½x24" J. & L., chuck equipment.
2½x24" J. & L., bar equipment.
3x36" J. & L., chuck equipment, double spindle.
2½x26" Greenlee.
14" Gisholt.
21" Gisholt.

MILLERS.

No. 5-B Becker.
No. 1 Steptoe.

BORING MILLS.

3"x24" Rockford.
24" Reed-Prentice.

RADIAL DRILL.

2½' Dreses.

FOR SALE BY

Chas. Molitor Machinery Co., 118-124 S. Clinton St., Chicago, Ill.

MILLERS.

Beaman & Smith vertical & horiz.
No. 3 Brown & S. univ. and plain.
No. 1 Brown & Sharpe vertical.
No. 2½ Rockford universal.
No. 3 Kempsmith plain, (2).
A large variety of smaller sizes.

LATHES.

30"x14' LeBlond, q. c. g., turret a.
24"x12' Bradford, qck. chg. gr.
20"x8' American, q. c. g., taper, relieving attachment.
24"x8' Lodge & Shipley, q.c.g.,taper.
14"x6' Hendey,taper,draw collets.(3)
16"x8' LeBlond, q. c. g.
14"x6' LeBlond & Bradford, q. c. g.
14"x6' Hendey, geared head, draw collets, oil pan, motor attached.
16"x8' Hendey, taper, draw collets.

SCREW MACHINE AND TURRET LATHES

Brown & S. aut., slotting att. (10).
Brown & Sharpe form. machine (15).
Brown & Sharpe semi-automatic (6).
Warner & Swasey Nos. 1 & 6 (6).

SHAPERS.

24" Gould & Eberhardt, grd. crank.
24" Hamilton, heavy, grd. crank.
24" Potter & Johnston.
16" Hendey.

MISCELLANEOUS.

8' power shear.
5-spindle New Britain.
18", 24", 30", 40" disc grinders.
High speed drill.
12"x6' key lathe.
Bolt cutter, (6).

Grinders, plain and universal; drill presses, hi-speed and plain; screw machines; punch presses; gear cutter; broaching machines; lo-swing lathes; die slotter; etc. 200 different sizes and makes. Partial list,

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FOR SALE BY

McDonald Machinery Co., 1531-33 N. Broadway, St. Louis, Mo.

Air compressors, Bury 12x12; Gardner 8x8.
Arbor presses, Eames No. 6; also bench type.
Bolt threader, Acme 3 hds. 1½" cap.
Chain hoists, Yale & Towne 1½ & 2-ton
Clock, electric time system.
Demagnetizer, Walker.
Drill, Baush 18-spindle.
Drills, Baker.
Drills, Leland-G.1,2&3spdl.,h.s.,b.b.
Drills, H. & W., Kokomo 1-spdl., Sipp 1 & 2-spdl., h. s., b. b.
Drills, 20", 24", 26 & 28" b. g., & tap.
Filing machine, Rearwin, floor type.
Furnace, Holcroft 92 k.w. annealing.
Gear cutter, No. 3 B. & S., 26".
Gear hobbers, Barber-Colman No. 12.
Grinder, Heald No. 60 cylinder.
Grinders, Ott 5x18"; Blount, 20" wet, (3); Landis No. 1 universal; Modern internal.
Hack saws, 4x4, 6x6 & 2 Racine Jrs; Atkins 4x4"; Racine 6x6", h. s.
Keyseaters, Davis No. 1 with cutters.
Lathes, South Bend 24"x14'; South Bend 21"x12" q.c.g.; Davis 22"x10'; Star 12"x5', tool room; L. & S. 16"x6'; L. & S. 18"x8'; LeBlond 19"x8' q. c. g. American 20"x9'; Walcott 18"x8'; Monarch 16"x8', all q. c. g.; 40 other assorted sizes; also Porter-Cable.
Milling machines, Kempsmith No. 2; Ohio No. 20 plain; Becker "SD" vertical, rotary table, 17200 lbs.; American No. 1½ universal; B. & S. No. 3 vert., s.p.d., with rotary tbl.; Ohio 34; LeBlond No. 3-H plain; Brown & S. No. 3 pl.; Cincinnati; No. 2 pl. and Becker No. 4-B vert; B. & S. No. 3-B plain, s. p. d.; Kempsmith No. 3 universal; No. 1 Kempsmith plain.
Pipe machine, Curtis 3", motor dr.; Merrill 4" belt drive; B. & K.8".
Planers, Gray 28"x28"x6', 1 head; Sellers 36"x36"x23', 2 heads.
Punches, Wetterhahn 18", throat ½" in ½"; Williams & White No. 15, double end punch and shears.
Punch presses, Bliss No.18C; Toledo No. 1; Swaine Nos. 29 and 37 o. b. i.
Pyrometer, Thwing elec., with rec.
Screw machine, Gridley 1-spdl. 2½" auto.; Cleveland 1½" auto.; P. & W. No. 2½ hand; Foster No. 3 hand; Woods No. 2 tilted turret head; Foster No. 0; Bardons & O. No. 7; National-A. No.52 auto.,4-sp.,m.d.
Shapers, Whipp 16" and 20"; Cinti. 20", b. g.; Ohio 20"; Ohio 16"; American 16" b. g.; S. M. 13"; S. M. 18"; Steptoe 14"; Flather 12" single geared.
Shears, 60" thrt. rotary slitting, (2).
Tapping machine, Garvin No. 2.
Welders, butt, Federal, ½" rds.
Welder, Toledo spot, 36" throat.

FOR SALE BY

Surplus Machinery Exchange, 426 E. Main St., Kalamazoo, Mich.

VERTICAL TURNING AND BORING MILL.

One Niles vertical turning and boring mill with two swivel heads on cross rail; will swing eight feet, four inches; height from table to cross rail, 72 inches; quick change gear feeds; five step cone drive; semi-quick change speed. This machine 90% new and priced at $3,000 f.o.b. Kalamazoo, Mich. A bargain.

FOR SALE BY

J. P. Rentschler & Co., - 6722 N. Maplewood Ave., Chicago

Hammer, 200 lb. Bliss, 4-poppet.
Press, No. 3 R. & K., o. b. i., 4" str.
Press, No. 3 Crosby, o. b. i., 1½" str.
Press, No. 126 Max Ams, 2" stroke.
Press, No. C-92 Ferracute, notch'g.
Press, No. S-51 Ferracute, dbl. chk.
Press, No. 5-A Toledo, o. b. i.
Press, No. 24 Mich. horning.
Press, No. 52 Bliss, s. s., f. w.
Shear, No. 203 Stoll, circle.
Shear, No. 136 Niagara, square.
Seamers, No. 12 McDonald, auto's.

Many other bargains. Lowest prices. What have you for sale?

FOR SALE BY

The Reeve-Fritts Co., 558-560 W. Washington Blvd., Chicago, Ill.

Arbor press, No. 5 Atlas, like new.
Die filer, No. 3 Barry floor type.
Engraving mach., No. 1-A Gorton.
Grinder, No. 3 Oakley surface.
Lathe, No. 4 Mosely bench prec.
Lathe, 9"x12" Sundstrand prod.
Lathe, 16"x6" P. & W., tool room.
Miller, 12" Leland H. S., router.
Miller, No. 3 Cincinnati, plain.
Miller, No. 2 Rockford plain.
Pipe machine, 6" Merrill, m. d.
Pipe machine, 12" Curtis & Curtis.
Press, No. 3-A American Can, o. b. i.
Screw mch., ⅜" & ½" Cleveland auto.
Shaper, 16" Economic, crank.
Spinning lathe, 24"x6' Schultz.

FOR SALE BY

Muskegon Machine Co., Inc., - - Newburgh, N. Y.

Boring and drilling mche., Fosdick No. 16 horizontal.
Broaching mche., LaPointe No. 3B horizontal.
Drill press, Snyder & Son 28" upright, 24" dia. table.
Drill, Mueller 3½' plain radial.
Engine lathe, Wickes 32"x12'.
Engine lathe, Amer. 24"x11', q. c. g.
Engine lathes, Monarch 16"x8', (4).
Engine lathe, Schellenbach 18"x6½'.
Engine lathe, Schumacher & Boye 20"x8', q. c. g.
Gear cutter, Newark auto. 10"x2½.
Gear hobber, Gleason 11".
Grinder, Landis plain, 12"x96".
Grinder, Landis No. 2 universal.
Milling machine, N. T. No. 6, slab.
Turret lathe, Acme 3½"x36".
Turret lathe, J. & L. 3"x36".

FOR SALE BY

D. E. Schellenbach, - Box 49, Station "N" Cincinnati, Ohio

Dependable used machinery—priced right!

Drill press, Barnes 15" upright	$ 57.
Drill press, Superior 20" upright, power feed	65.
Drill press, Superior 20", b. g., power feed	75.
Hack saw, "Atkins" Kwik-kut, 8"x8" capacity	135.
Lathe, 12"x5' Willard tool-room, q. c., d. b. g.	245.
Lathe, 15"x6' Von Wyck, back-geared, rebuilt	195.
Lathe, 16"x6' Sebastian, taper attachment	285.
Planer, "G. A. Gray" 24"x24"x6', 1-head	485.
Screw machine, "Acme" 1"x1" cap., late type	235.
Steel lockers, (12), six-section type, 95% new, best offer.	
Turret lathe, Dreses, q. c. power feeds, complete	275.
Turret lathe, J. & L. 2"x24" bar and chuck, late	850.
Trip hammer, Little Giant, 12"x12" die-head, cheap.	

What have you to sell? Send your inquiries to me.

FOR SALE BY

Brown Machinery Co., - - 2323 N. 9th St., St. Louis, Mo.

Beaders, No. 8 Pettingell, 42" thrt.
Blowers, Nos. 7 & 9 Sturtevant.
Buffer, Hisey, 3 h.p., 3-p., 60 c., 220 v.
Cut-off mchs., Nutter & Barnes.
Drill, 20" Canedy-Otto, b. g., p. f.
Drill, 22" Barnes, slid. hd., b. g., p. f.
Drill, 24" Aurora b. g., p. f., t. a.
Drill, 25" Superior, sliding head.
Drill, No. 2 Barnes horiz. radial.
Drill, horiz. radial, No. 3 Barnes.
Furnaces, Nos. 1 and 2 American.
Grinders, emery, St. Louis & Western, 100 new at 50% discount.
Grinders, drill, W. & M. American.
Grinder, pl. and surf., No. 1 LaSalle.
Grinders, tool, Diamond.
Grinders, tool post, U. S. & Hisey.
Grinders, plain, No. 12 B. & S.; 10x36" Norton; 5x18" Ott.
Grinder, cylinder, No. 60 Heald.
Grinders, disk, No. 6 Besly; No. 14 Gardner.
Grinder, universal, No. 12 B. & S.
Grinder, 30" Diamond, roll or spdl.
Hammer, size A United, 50 lbs., m.d.
Hammer, helve, 40 lb. Bradley.
Keyseater, No. 2 Davis.
Lathe, 36"x10' Whitcomb-B., q. c. g.
Lathe, 20"x 8' Lodge & S., q. c. g.
Lathe, 17"x 6' Cincinnati.
Lathes, 16"x8' Monarch, q. c. g.
Lathes, 16"x6' Monarch, q. c. g.
Lathes, No. 5A Potter & Johnston, with chucks.
Lathe, turret, 16" Gisholt.
Motors, 1, 3, 5, 7½, 10, 15, 25 h. p., 3-ph., 60 cy., 220 v.
Miller, No. 6 Whitney hand.
Miller, No. 4 Garvin plain.
Planers, 60"x60"x20' Niles, 3 heads.
Polishers, drop head, New Britain.
Press, No. 5 Stiles & Parker, grd.
Press, Bliss pattern, o. b. i.
Riveter, ¾" Adt.
Screw machine, 1" Pratt & Whitney.
Shapers, 24" L. & D.; 24" S. & S.
Shear, rotary, No. 13 Pettingell.
Shear, rotary splitting, No. 134 Marshalltown, 4' throat, ⅜" cap.
Tapping machines, Garvin; Burke C.

Full Line of P. S. & W. Sheet Metalworking Machinery.

FOR SALE BY

Cincinnati Machinery & Supply Co.,

28-30-32 West Second Street, - - Cincinnati, Ohio

LATHES.

48"x12' American, grd. hd., late type.
36"x16' Fay & Scott, l. c. g., tr. grd.
27"x18' Lodge & Shipley.
24"x10' American, grd. hd., s. p. d.
17"x 8' LeBlond, q. c. g., latest type.
16"x 8' American, q. c. g.
16"x 8' Hendey, yoke head.
14"x 6' Hendey, yoke head.

MILLING MACHINES.

No. 2-B hvy. Brown & S., s. p. d.
No. 2 LeBlond universal, complete.
No. 3 LeBlond pl. miller, latest type.
No. 3 LeBlond universal, cone drive.

GEAR CUTTERS AND GRINDERS.

18-H Gould & Eberhardt hobber.
18" Gould & Eberhardt hobber.
No. 1 Adams Farwell hobber.
72" Cincinnati gear cutter.
Gleason gear generators, 6", 11", 18".
10"x36" Landis, self-cont., latest.
No. 2 Ohio universal tool and cutter grinder.
No. 3 Ohio universal tool and cutter grinder.
No. 21 Besly disc grinder, 36".
No. 60 Heald cylinder grinder.

RADIALS AND UPRIGHT DRILLS.

5' American, cone drive.
4' Bickford, tap. att., cone drive.
26" Rockford upright, latest.
28" Cincinnati upright drill.

PLANERS AND SHAPERS.

25" Smith & Mills crank, b. g. cone.
28" G. & E. crank, high duty, cone.
20" Queen City crank, b. g. cone.
24" Hendey, friction geared.
24"x24"x5' Gray planer, one head.
48"x48"x16' Gray planer, four heads.
42"x36"x12' Cleveland, open side.
60"x60"x20' Cincinnati, planer.

MISCELLANEOUS.

Bolt cutter, 1½" Landis, dbl. spindle.
Boring mill, 10' Pond vertical, modern type, 2 heads.
Boring Mill, 36" Bullard vertical.
Keyseater, No. 1 Davis, complete.
Punch press, Bliss No. 19, inclinable.
Press, No. 164 Toledo toggle, deep drawing.
Punch press, Bliss No. 18, inclinable.
Punch and shear, Kling, s. e., 4x4, 24" throat.
Shear, No. 3 Lenox rotary, ⅜" cap.

Write for our large machinery list. Always in the market for machinery.

FOR SALE BY

Clark Machinery Co., 1235 St. Clair Ave., Cleveland, O.

Lathe, 24"x16' Schumacher & Boye.
Milling machines, universal and plain.
Planers, 28"x28"x8' and 42"x42"x8' Gray, 2 heads.
Radial drills, 3' American and 3' Prentice.
Screw machines, No. 4 and No. 6 Warner & Swasey.
Shapers, 16" Ohio and 20" Whipp, b. g.
Spinning lathes, Pryibil 18".

FOR SALE BY

Colcord-Wright Machinery & Supply Co.
1223-29 North Broadway, - - - St. Louis, Mo.

Automatic, No. 00 B. & S.
Automatic, No. 0 B. & S.
Automatic drop press, No. 2 Standard
Boring mill, 30" Gisholt, m. d.
Fox Lathe, No. 2 W. & S. universal.
Grinder, No. 1 B. & S. universal.
Grinder, No. 2 Diamond water tool.
Grinder, No. 4 Modern universal.
Miller, Whitney hand (3).
Miller, No. 2 Hendey Lincoln (5).
Miller, Gooley & Edlund.
Paint grinding mill, Day.
Pipe machine, 12" Curtis.
Planer, 24x24x6' Ohio.
Planer, 48x36x12' Cleveland openside.
Polishing & finishing mche., B. & S.
Press, P4 Ferracute.
Punch, style M6 Rock River.
Scrap baler, Champion (2).
Screw machine, No. 2 W. & S., w. f.
Saw grinder, 12" Automatic.
Saw, No. 1 Cochrane-Bly.

FOR SALE BY

Miles Machinery Co., - - Saginaw, W. S., Mich.

Automatics, No. 00 Brown & S.
Boring mill, 53" Niles-Bement P.
Boring mill, horiz. 3½" universal.
Broaches, Nos. 1, 2 and 3B LaPointe.
Compressor, 10"x10" Chicago.
Drill, upright, 32" Superior.
Drill, radial, 3½' American.
Grinder, 10"x36" Norton.
Grinder, 12"x12"x36" Diamond, sur.
Gear hobbers, Nos. 3 & 12 Barber-C.
Gear hobbers, 12", 18" & 24" G. & E.
Gear shaper, No. 61 Fellows.
Hammer, No. 2B Nazel.
Lathe turret, No. 2A W. & S.
Lathes turret, 21" and 24" Gisholt.
Lathe engine, 14"x6' Monarch.
Lathe engine, 18"x8' Bradford.
Millers, No. 2BS & 2B Milwaukee.
Millers, universal, Nos. 1, 2 and 3 Kempsmith.
Miller, vertical, No. 4 Cincinnati.
Planer, 36"x36"x10' Cincinnati.
Planer, 48"x48"x12' Pond.

Partial list. Send us your inquiries.

FOR SALE BY

E. L. Klauber Machinery Co., 320 South Third St., St. Louis, Mo.

Brakes, 5' and 10'.
Drill, radial, 42" Bickford.
Drill, multiple, 10-spindle Gardam.
Drill, 2-spindle, Taylor & Fenn.
Furnaces, American hardening.
Furnace, melting Hausfeld tilting.
Gear cutter, 32" Whiton.
Gear miller, automatic, 4" cap.
Grinder, Bryant No. 18 internal.
Inside cutting machine, Excelsior No. 11.
Keyseater, Davis No. 2.
Lathe, 24x15 Lodge & D. Bargain.
Lathes, 12" to 26".
Miller, No. 2 Cincinnati, div. hds.
Miller, No. 2 Kempsmith.
Millers, hand, No. 0 & No. 3 Burke; No. 23 Fox.
Planer, 30"x30"x9' American.
Press, No. 18 Bliss, o. b. i.
Press, No. 19 Bliss, o. b. i.
Press, V. & O. No. 1, o. b. i.
Press, forming, die space 18x42.
Presses, Niagara, foot.
Rivet spinners, Grant, (4).
Saw, 9x9 Atkins Kwik-Kut.
Screw machine, Greenfield ¾" cap., Superior 1¼" cap., Foster 1½" cap.
Shapers, 14" Rockford; 16" S. & M.
Shear, serpentine, Lenox ¼".

USED AND REBUILT MACHINERY

FOR SALE BY

Henry Prentiss & Co., 439 Communipaw Ave., Jersey City, N. J.

Bolt cutter, 2" Acme, double head.
Bolt header, 2½" Acme.
Boring mill, 24" Bullard, New Era.
Boring mill, 42" Bullard, power rapid traverse.
Boring mill, 102" Poole.
Boring mill, No. 1 Lucas horizontal.
Broaches, Nos. 1 & 4 LaPointe.
Drill, No. 1½ Avey 2-sp., b.b.,bench.
Drills, 24" & 32" Cincinnati.
Drill, No. 25 Foote-Burt high speed, ball bearing.
Drill, 5' Dreses radial, s. p., b. b.
Drill, 6' Cincinnati-Bickford plain radial, s. p., g. b.
Drill, 11' Lynd-Farquhar (wall).
Drill, No. 30 Natco multi spindle.
Drill, 26" Barnes all-grd., 4-spindle.
Gear cutter, 6" Gleason generator.
Gear cutter, 36 BM, Gould & E.
Grinders, 3"-6"-10" Norton plain.
Grinder, 12" Cincinnati universal.
Grinder, No. 2 Norton cutter & tool.
Grinder, No. 60 Heald cylinder.
Grinder, No. 65 Heald cylinder.
Grinder, No. 6 Besly disc.
Lathe, 14"x10' L. & S., s. p. or m. d.
Lathe, 16"x 8' LeBlond.
Lathe, 20"x12' American, s.p. or m.d.
Lathe, 24"x10' Lodge & Shipley.
Lathe, 30"x12' L. & S. s. p. or m. d.
Lathe, 38"x20' Schumacher-Boye.
Lathe, 28"-44"x16' McCabe, dbl. sp.
Planers, 24"x 6 & 8' Ohio.
Planer, 48"x12' Powell.
Planer, 60"x44"x12' Pond.
Press, No. 2½ Billings & Spencer trimming, slide cutting attach.
Press, No. 5 V. & O. incl.
Screw machines, auto. ⅞", 1", 1¼", 2½". Gridley.
Shapers, 16", 20" & 24" Cincinnati.
Shaper, 16" Gould & Eberhardt.
Shaper, 20" American.
Turret machines, 1½", 2½", 3½" Acme.
Turret machines, 2½" & 3½" J. & L.

Partial list only. Inquiries addressed to

439 Communipaw Ave., Jersey City, N. J. will receive prompt attention.

LATHES

Pratt & Whitney, 12"x5' Tool Room, with pan, 4-Jaw combination chuck, 9 collets, taper attachment. This machine is like new.....$490.
14"x8' Carroll-Jamieson, quick chang gear, semi-enclosed head, screw cutting dial, complete regular equipment. Fine condition..... 250.
15"x6' South Bend. practically new, complete regular equipment..... 225.
16"x8' Monarch, quick change gear, screw cutting dial, complete regular equip., draw-in chuck, 3 collets, for all practical purposes good as new 375.
20"x10' Boye & Emmes, quick change gear. Very good condition..... 575.

DRILL PRESSES

Aurora, 24" sliding head, back geared, geared power feed. Good cond....$190.
Cincinnati, 21" sliding hd., bk. grd., grd. pw. fd. This is really a new tool 225.
Rockford, 20" back geared, grd. power feed. This is really a new tool... 95.
Henry & Wright, class K, 2 spindle high speed ball bearing..... 250.
Hoeffer, 24" sliding head, back geared, geared power feed..... 175.

MILLING MACHINES

No. 12 Brown & Sharpe, plain production. Very good condition.....$190.
U. S. Hand Miller, regular equipment. Very fine condition ..... 100.
Cincinnati Semi-Automatic, with 2 spindles, arranged for straddle milling and facing connecting rods, table 11"x51". Excellent condition..... 450.
No. 1½ Cincinnati universal, complete, dividing head, chuck, vise, etc. This mche. is accurate, really good as new, been using in our own shop 850.
Grant, geared hd., Lincoln Type Miller, table 12"x30", inside oil pockets. A real machine for heavy production and a bargain for..... 150.

MISCELLANEOUS

Automatic Screw Machine, Cleveland Model A, 2" caacity, serial No. 210828. This machine is in good operating condition.....$500.
Acme Bolt Cutter, 2-spindle 1" capacity, complete with die heads, and one set of chasers in each head. Very fine condition..... 325.
Rickert & Shafer Tapping Machine, ⅝" cap., on stand Practically new. 85.
No. 1 LeBlond Univ. T. & C. Grinder, univ. equipment. A new tool.... 450.

The Co-Operative Machinery Co., 7514 Indiana Avenue, CLEVELAND, OHIO

Look at these Automatics

Also the other machines

SCREW MACHINES

1 No. 00 Brown & Sharpe Automatic, Serial 5803.
1 No. 0 Brown & Sharpe automatic, Serial 3685.
Above have slotting attachments.
2 ⅜-½" Model B Clevelands, Serials 24196, 24198.
7 ⅜-½" Model A Clevelands, Serials 22928 to 30920.
1 No. 0 Brown & Sharpe hand screw machine.
2 No. 1 Brown & Sharpe hand screw machines.
3 No. 1 Garvin hand screw machines.
6 No. 4 Milholland hand screw machines.
1 2½" Gridley multiple spindle, Serial 9186.

PRESSES AND PUNCHES

1 150 Ton American Can Embossing.
1 No. 126B Max Ams inclinable, 2" stroke.
1 No. 3 American Can inclinable, 2½" stroke.
1 No. 20 Bliss inclinable, 2" stroke.
1 No. 32 Michican solid back, stroke 1⅜".
1 No. 93 Consolidated solid back, stroke 1½".
1 No. 5 Long & Allestatter single end punch, 4" throat.
1 Style E Rock River punch, architectural jaw.

DRILLS

1 20" Barnes back geared with tapping attachment.
1 28" Hamilton, back geared, sliding head.
1 36" Cincinnati back geared, sliding head, tapping attachment.
1 36" Cincinnati Bickford radial, gear box drive.
1 No. 4 Quint turret drill.
1 No. 513 Baker drill, 5" capacity in steel.

TURRET LATHES

2 21" Gisholt lathes, late type.
1 21" Libby full swing, 4⅛" hole.
2 No. 6 Foster friction head, power feed turret.

MILLING MACHINES

1 10 Kempsmith hand miller, lever feeds.
2 No. 0 Brown & Sharpe millers.
3 No. 25 Becker plain millers.
1 No. 2 Cincinnati universal, with index centers.
1 No. 3 Cincinnati plain miller, all feeds.
1 No. 3 Kempsmith plain miller, all geared feeds.
1 No. 3 LeBlond plain miller, vertical attachment.
1 No. 3 Cincinnati high power vertical, arranged for motor.
2 No. 5 Becker vertical millers.
1 No. 6 Becker vertical miller, 60" feed.

MISCELLANEOUS

No. 0 Mitts & M. keyseater.
No. 2 Davis keyseater.
⅜" Grant rivet spinner.
15" Dill slotter.
Size B Jarecki screw press.
No. 85 Heald internal grinder.
No. 23 Whitney cylinder grinder.
20" Rockford B. G. shaper.
36"x15' Betts planer, 2 heads.
Type NC Kobert electric riveter.

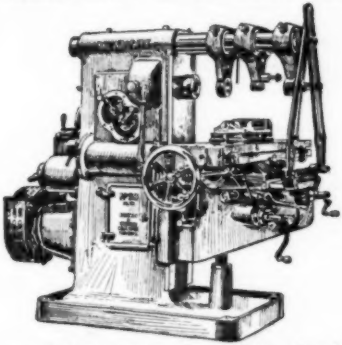
Included in above are some very choice machines from Oliver Typewriter Co. Every machine in nice condition

A. D. White Machinery Co.

108-114 N. Jefferson St., Chicago, Ill.

Milwaukee Millers—

Like New—But Cost Less



Factory Rebuilt Milwaukee Milling Machines

Only a few left. They will satisfy both your Production and Purchasing Departments. Every machine is completely disassembled, re-scraped, and new parts used wherever needed. They carry the same accuracy guarantee as our new machines. First come, first served. Better write today.

THESE ARE STILL AVAILABLE

No. 1B Plain
No. 2AS Mfg. M. I. B. (Motor-in-Base)
No. 2B Universal
No. 3B Plain
No. 3B Vertical
No. 2A Manufacturing

SUBJECT TO PRIOR SALE

Address: Rebuilding Department

MILWAUKEE MILLING MACHINES

KEARNEY & TRECKER

CORPORATION

5926 National Ave., Milwaukee, Wisconsin

Machines of Quality

A Used Machine is as Dependable as the Dealer Who Sells It

THE MOTCH & MERRYWEATHER MACHINERY CO.

CLEVELAND

DETROIT CINCINNATI PITTSBURGH

This is a Partial List Of Dependable Machines In Stock

BORING MILLS

24" Bullard V. T. L., New Era Type.
61" Bullard Maxi-Mill.
42" Gisholt Rapid Power Traverse, one turret head, plain head.
51" Bullard Standard Turning and Boring Mill.
54" Bullard Boring and Turning Mill, rapid production type.
8' Cincinnati Boring Mill, rapid traverse, 2 swivel heads.
No. 1 Cleveland Horiz., sgl. pulley dr.
No. 21 Lucas Horizontal Boring Mill, single pulley drive.

DRILLS

Nos. 217, 310, 314 Baker.
No. 32 Natco, arranged for 40 spindles, motor drive.
32" Natco, arr. for 20-spindles, m. d.
36" American Sensitive High Speed Radial, tapping attachment.
3½' American Pl. Radial, gr. box dr.
6' American Radial, gear box drive.

GEAR CUTTERS

36S Gould & E. Spur Gear Cutter.
No. 12 Barber-Colman Gear Hobbers.
6" Gleason Bevel Gear Generator.
11" Gleason Bevel Gear Generator.
60" Brown & Sharpe Gear Cutter.

GRINDERS

6x32 Norton.
10x50 Norton.
No. 2 Brown & S. Surface Grinder.
No. 22 Heald Rotary Surface Grinder, 12" magnetic chuck.
No. 255 Heald Rotary Surface Grinder, 8" or 12" magnetic chuck.

LATHES

16x8 LeBlond, taper att., cone drive.
18x8 Hendey, yoke type, cone dr., t. att.
20"x14' Schumacker & Boye, with taper attachment, cone drive.
36x10 American, geared head, with taper attachment.
36x28 Lodge & Shipley, sel. hd., t. att.
42x32 American, geared head, with 35 h. p., d. c. motor.

MILLING MACHINES

No. 1-B Brown & Sharpe plain, single pulley drive.
No. 2-A Brown & Sharpe, Universal, single pulley drive, dividing head.
No. 4 Cincinnati Horizontal Universal Milling Machine, single pulley drive.
No. 4 Cincinnati Universal, with dividing head, cone drive.
No. 3 Cincinnati Vert., sgl. pulley dr.
No. 4 Cincinnati Vert. sgl. pulley dr.

PLANERS

36"x36"x10' Cleveland Openside.
24"x24"x10' Gray, 1 head on rail.
42"x42"x10' Detrick & Harvey Open side Planer.
48"x48"x12' Cleveland Openside, 2 hds. on cross rail, 1 side hd., belt dr.

SHAPERS

15" Potter & Johnston Univ., cone dr.
20" Cincinnati, 24" Gould & Eberhardt, 24" American, cone drive.
20" G. & E., cone drive.

TURRET LATHES

No. 4 Warner & S., pwr. fd. to turret.
No. 3-A W. & S., comp. ck. equip.
2¼x26 Cincinnati Acme, cone drive.

In addition to above list we have several hundred machines going through the process of rebuilding.

Ware House and Shop Located at

888 East 70th St., CLEVELAND, OHIO

The Motch & Merryweather Machinery Co.

Exceptional Values

MILLING MACHINES

No. 3-H R.K. LeBlond hvy. duty Univ., cone pulley, complete, Latest Type.
No. 4 R. K. LeBlond heavy duty Univ., cone pulley, complete.
No. 3 B. & S. Univ., cone pulley comp.
No. 2 Brown & Sharpe Universal, cone pulley, complete.
No. 1½ B. & S. Univ., cone pulley, comp.
No. 1½ Cincinnati Univ. cone pulley comp.
No. 5 R. K. LeBlond hvy. duty plain, motor drive, all geared.
No. 4 Cincinnati **High Power** Plain, cone pulley, late type.
No. 3-B Hvy. B. & S. pl. single pulley.
No. 3 B. & S. Pl., cone pulley, Latest ty.
No. 3 Kempsmith Plain, cone pulley.
No. 3 Cincinnati Plain, cone pulley.
No. 2½ LeBlond Plain, cone pulley.
No. 2 Hvy. B. & S. Plain, cone pulley.
No. 2 Kempsmith Plain, cone pulley.
No. 1½ Cincinnati Plain, cone pulley.
No. 0 R. K. LeBlond Plain, cone pulley.
No. 3 B. & S. vertical, single pulley.
No. 3 Becker Vertical, cone pulley.
No. 21 Brown & Sharpe Automatic Milling Machine, single pulley Latest Type.
Gooley & Edlund **(Briggs Type)** Mfg. Millers, **All Sizes.**
Nos. 0 & 2 Bristol Ball Bear. Hd. Millers.

ENGINE AND TURRET LATHES

42"x18' American Tool Works Geared Head, q. c., Triple Grd., Late Type.
32"x34' American Tool Works. q. c.
26"x8' Walcott Q. C. Lathe.
24"x12' American Tool Works Geared Head q. c. Lathe, Latest Type.
24"x12' Lodge & Shipley Q. C.
20"x10' Lodge & Shipley, q. c., late type.
21"x10' R. K. LeBlond quick change.
20"x12' Lodge & Shipley quick change.
19"x12' Sidney quick change, taper att.
18"x10' Am. Tool Wks q.c. Latest Type.
18"x10' Am. Tool Wks., grd. hd., q. c.
18"x8' Am. Tool Wks. q. c., latest type
18"x8' Greaves & K. q. c. Latest Type.
17"x8' R. K. LeBlond quick change.
16"x10' R. K. LeBlond quick change.
16"x8' R. K. LeBlond quick change.
16"x6' Monarch quick change.
14"x6' Lodge & Shipley q. c., latest type.
14"x6' American Tool Works q. c.
24" and 21" Gisholt Turret, late types.
18" Libby High Duty Turret Lathe, Late Type 3½" Spindle Hole.
3"x36" Jones & Lamson Turret Lathe.
2" Pratt & Whitney Turret Lathe.
Nos. 2, 4 and 6 Warner & Swasey Turret Lathes.
Nos. 2, 4 and 6 Foster Turret Lathe.
No. 4 Bardons & Oliver Turret Lathe.
No. 4 Millholland Turret Lathes.
No. 4 Brown & Sharpe wire feed Screw Machine, roller feed.
No. 2 S. P. Garvin Screw Machine.

GEAR MACHINERY AND GRINDERS

No. 12 Barber-Colman Gear Hobber, Late Type, Serial 1690
No. 18-H Gould & Eberhardt High Duty Gear Hobbers.
No. 5-A Lees-Bradner Gear Hobbers, 14 and 19" sizes.
No. 6 Fellows Gear Shapers.
No. 61 Fellows Gear Shaper.
20" Ingle Gear Tooth Rounding Mche.
No. 3—36" No. 3 26" Brown & Sharpe Auto. Spur Gear Cutters, Latest Types.
84" Diamond Face Grinder, arranged for motor drive.
No. 1½ Walker Auto. Surface Grinder with magnetic chuck.
No. 1½ Walker Single Stroke Surface Grinder, with 10" Diam. mag. chuck.
Nos. 70 & 75 Heald Internal Grinders.
Capital Internal Grinder with collett att.
No. 6 Rivett Internal Grinder.
No. 60 Heald Cyl. Gr., Late Type, cons
No. 6—26" Gardner Disc Grinder.
No. 12 26" Besly Disc Grinder.
No. 120—Gardner ball bearing double Disc Grinder.
16"x36" Landis Pl. Self-Cont. Grinder, Lathe Type.
10"x50" Norton Plain Grinder.
12"x36" Cincinnati Plain Grinder.
8"x30" Modern Plain Self-Contained Grinder, 95% new.
Nos. 1 & 3 Brown & S. Univ. Grinders.
No. 1 R.K. LeBlond Univ. Tool & Cut.
New Yankee Twist Drill Grinder.

EASTERN MACHINERY CO.,

We also Buy machinery.

Rebuilt and Guaranteed Machine Tools

SHAPERS AND PLANERS

32" Cincinnati heavy duty b. g. Crank. Shaper, motor drive.
26" Stockbridge Heavy Duty B. G. Crank, power down feed to head.
24" Queen City heavy duty b. g. Crank.
24" Walcott Heavy Duty B. G. Crank.
21" Averbeck Hvy. Duty, b. g. Crank.
20" Cincinnati hvy Duty b. g. Crank.
16" Hamilton Heavy Duty B. G. Crank.
15" American Tool Works Crank.
12" Smith & Mills Crank Shaper.
26"x26"x8' Woodward & Powell Planer 1 head.
36"x36"x14' American Tool Works Planer, 2 heads.
38"x38"x18' Niles Planer, 2 Heads.

RADIALS AND UPRIGHT DRILLS

5' Reed-Prentice Plain Radial Drill, arrange for motor drive.
4' American Tool Works triple geared Plain Radial, gear box drive.
4' Cinti-Bickford Pl. Radial, gear box dr.
3½' Cisco-Mueller Plain Radial, motor drive thru gear box.
2½' Carlton ball bearing Sensitive Radial, tapping attachment.
3' American Tool Works Sensitive Radial, tapping attachment.
Nos. 1 and 3 W. F. & John Barnes Horizontal Radials.
28" Aurora Upright, Drill Press.
28" W. F. & John Barnes upright Drill Press, Late Type.
26" Reed-Prentice Upright Drill Press, gear box drive.
26" W. F. & John Barnes Upright Drill Press, Late Type.
24" Cinti-Bickford Upright Drill Press.
24" Aurora Upright Drill Press.
22" W. F. & J. Barnes Upright, Drill Pr.
22" Aurora Upright Drill Press, tap. att.
No. 310 Baker Bros. heavy duty Drill.
No. 20 Baker Brothers Automatic Drill with automatic indexing table.
Nos. 0 & 1 Fox Multiple Drill Presses.
Nos. 11 & 12 Pratt & Whitney Multiple Drill Presses.
No. 41 Natco Multiple Drill Press equipped with 8 spindles.
Henry & Wright Class "B" Ball Bearing.
No. ½ Avey Ball Bearing Drill.
1, 2, 3 and 4-spindle Henry & Wright Ball Bearing Drills.

MISCELLANEOUS

Arbor Press, No. 4 Atlas, floor type.
Arbor Press, No. 55 Atlas, power.
Automatic Machine, 1¼" Cleveland, Model "B", Late Type.
Bolt Cutters, 1" and 3" Acme, class A.
Bolt Threading Machines, 1" and 1¼" Landis, with lead screws.
Bolt Threading Mche. 1" Landis, dbl. sp.
Boring Mill, 24" Bullard vertical, rapid production type with turret and side hd.
Boring Mill, 37" Niles Tool Works Vertical, with 2 swivel heads.
Chucking Mch., No. 33 New Britain auto.
Compressor, Steam Drive, 18"x12"x12" Worthington, 2-stage, cap. 700 cu. ft.
Broaching Machine, No. 3-B LaPointe, Late Type.
Broaching Machine, Double Nos. 2 & 3 J. N. LaPointe, Late Types.
Die Sinking Machine, No. 2 Pratt & W.
Driller, Gun Barrell, No. 1P. & W., 2 sp.
Geared Press, No. 91-B Toledo, double crank, 32" between uprights.
Hammers Helve, Nos. 40 & 60 Bradley, rubber cushioned.
Press, Pwr. Forcing, 15 ton Lucas, belt dr.
Press, Power, Nos. 102 & 103 Bliss-Consolidated, double crank, o. b. l., fly wheel drive.
Presses, Power, P-No. 2, P No. 3 and P-No. 4 Ferracute, fly wheel drive.
Profilers, No. 12 Pratt & Whitney, 2-sp.
Screw Machine, No. 52 National Acme, automatic.
Thread Milling Machine, 4½"x12", Pratt & Whitney.
Thread Milling Mche., 6"x80" P. & W.
Welder, Electric Spot, Thomson, Model 240, cap. to weld 2 pieces of ⅛".

And Many Others. Send Us Your Inquiries.

CO., 408 E. Pearl St., CINCINNATI, O.

What have you to Sell?

Bath's Guaranteed

Boring Mills—Vertical

44" Baush, 2 swivel heads.
48" Colburn boring mill.
51" Niles-Bement-Pond.
84" Niles-Bement-Pond 4 heads, gear feed.

Boring Mills—Horizontal

3" bar Binsse, table type.
3½" bar Rochester, floor type.

Cranes

5 to 25 ton, all spans, both a. c. & d. c.

Drills

Allen single spindle, ball bearing.
4-spindle Moline rail drill, 1½" capacity.
No. 1, 8' wall radial.
30" Cincinnati, sliding head.
30" Aurora, sliding head.
24" No. 25 Foote-Burt, with compound table.

Forging Machines and Bulldozers

1½", 2½" and 4" Ajax Upsetters.
¾" and 1½" Acme steel bed Upsetters.
Nos. 2, 4 and 5 Williams & White Bulldozers.
250-ton Mesta Steam Hydraulic, 85%.

Grinders

84" Diamond face grinder.
18x96" Norton plain.
17x36" Landis universal.
No. 2 Norton universal tool and cutter.
No. 20 Safety electric floor grinder, 10 HP motor, 32"x4" wheels.
Various electric floor grinders and grinding stands.
No. 2 Diamond surface grinder.

Keyseaters

No. 00 Baker, capacity ¾"x8", tilting table.

Lathes

16" to 18"x6'-8' beds, tool room.
20"x10' Boye & Emmes, quick change, double back geared.
26"x14' Greaves-Klusman lathe.
30"x14' Boye & Emmes, double back geared.
36"x14' Schumacher & Boye, triple geared.
42"—60"x34' Houston, Stanwood & Gamble, grd. hd., mtr. dr.
60"x20' American, triple geared.

Tumbling Barrels

Several sets 18"x48" steel lined, square, with roller bearings and exhaust.

CYRIL J. BATH & CO., E. 70th &

ed" Cleveland Stock

Hydraulic Equipment

175-ton R. D. Wood 4-column Flanging Press.
Morgan Hydraulic Riveter, 8' 6" gap.
Wood and Bement-Miles Hydraulic Riveters, 10' 6" gap.
15-ton Hydraulic Mfg. Co. Press.

Milling Machines

Style "B" Gooley & Edlund, table 54"x11½". (2).
20"x7½"x18" Oesterlein plain, belt drive.
No. 1 Rockford plain, back geared, 22"x6½"x15'.
No. 2-B heavy Brown & Sharpe plain, 28"x10"x19".
No. 3 Hendey, geared head, plain.
No. 4 Cincinnati high power miller, table 64½"x16½".
Becker miller, model "C", table 14"x54".
Nos. 2 & 3 Pratt & Whitney Die Sinkers.

Planers and Shapers

22"x24"x57" Fitchburg, single head.
30"x30"x8' Gray, single head.
36"x36"x14' Gray planer, 2 heads.
60"x60"x20' Cincinnati, 3 heads, very good.
48"x48"x14' Hamilton, 4 heads.
12" Springfield, crank shaper.
24" Rockford, Queen City, and Cincinnati shapers.
16" Queen City shaper.
24" Gould & Eberhardt, invincible type.

Punches and Shears

84" throat, Long & Allstatter, capacity about ¾" thru ¾".
Kling Bros. horn press, 60" horn, flywheel 50" dia. 6½" face.
48" throat No. 4 Southwark, capacity 2"x1¼".
48" throat Bement-Miles cap. 1¼"x1".
36" throat Lennox rotary shear, capacity about ½" plate.
15" throat No. 14 Williams & White.
Lennox rotary bevel shear, ¾" capacity.
76" Multiple punch, shear or press, ⅝" capacity.

Turret Lathes and Screw Machines

3"x36" Jones & Lamson.
No. 4 Bardons & Oliver.
6-A and 7-A Potter & Johnston automatics.

MISCELLANEOUS

Acetylene Generator.
Blower, No. 4 Root, motor drive.
Blowers, Nos. 1 & 2 Buffalo Forge.
Bolt cutters, Acme, 1" and 1½" capacity, Landis 1½".
Chain Hoists, ½, 1, 1½, 4 & 6 ton.
Cold Saw, No. 4 Cochrane-Bly.
Gear Hobber, 5-A Lees-Bradner.
Hammer, 100 lb. Bradley helve.
Pipe Machines, 4" Jarecki, 8" Merrill.
Slotter, 48" Niles-Bement-Pond, motor drive.

& Machinery Av., N. E., Cleveland, O.

A Few Choice Selections

Did you see our September ad?

No. 60 Heald Cylinder Grinder, late type, new grinding head, new graduated angle iron full width, machine like new throughout	$ 750.
16x48 late type Landis Crankshaft Grinder; universal centers, single pulley drive, like new	875.
12x48 Brown & Sharpe plain Grinder, No. 14; complete like new	750.
8x24 Landis plain Grinder, good condition	185.
No. 1 Wilmarth & Morman Tool & Cutter Grinder, like new	450.
No. 5C Becker Vertical Miller, circular table; late type; like new	725.
No. 6 Becker Vertical Miller, circular table, late type; heavy duty; like new	950.
No. 2 Brown & Sharpe Universal Miller, cone drive, complete equipment, dividing head, vise; ex. cond.	785.
No. 1 Brainerd Universal Miller, dividing heads, vise, complete equipment. Good value at	375.
No. 1½ American Plain Miller, heavy, geared feed, vise, excellent condition. Table 36x10"	450.
No. 1½ Ohio Plain Miller, vise. Good working order	195.
No. 3 Brown & Sharpe Plain Miller, geared feeds, vise, good condition	525.
P-6 Ferracute, Stiles type, Press. Wt. 13,000 lbs., used only one month	700.
No. 84 Toledo, Stiles type, Press. Wt. 5000 lbs., good cond.	335.
No. 16 Stoll, o, b. i. Press, geared. Wt. 6000 lbs., ex. cond.	590.
No. 5 Consolidated o. b. i. Press, good condition	475.

A. R. Marsh Machinery Company,

From Our Stock!

If not, be sure and look it over.

No. 6 Waterbury-Farrel o. b. i. Trimming or Stamping Press with side cutter, Wt. 8000 lbs. A rugged, unbreakable press in good condition	$ 700.
75½T Bliss straight side Stamping or Trimming Press with side cutter, wt. 17000 lbs. with 220 or 440 a. c. motor, 5" shaft, good condition	1200.
30-ton Watson & Stillman Hydraulic Forcing Press with pump, good condition	400.
No. 55 Atlas Power Forcing Press, perfect condition	185.
42x12' Gleason Lathe, triple geared, face plate drive, 36" 4-jaw chuck, fair condition throughout	550.
21x10 LeBlond heavy-duty, double back geared Lathe, quick change gears, excellent condition	725.
21x8 LeBlond heavy-duty Lathe, 12 speeds, geared head, powerful, accurate. Excellent condition	750.
20x12 Hendy Lathe, yoke-head type, like new	975.
18x9 Prentiss geared head Lathe, good condition	550.
14x6 LeBlond Lathe, quick change gears, good cond.	225.
2" Acme Bolt Cutter, 31 sets chasers, fair condition	300.
2 sp. 1½" Acme Bolt Cutter, lead screws, new die heads, good condition	550.
1" Landis Bolt Cutter, late type, good condition	275.
3x36 J. & L. Turret Lathe, late type, 2 sp., like new	550.
3x36 J. & L. late type, geared feed, bar equipment	425.
3x36 J. & L. geared feed, chucking equipment, like new	425.
2¼x24 J. & L. geared feed, with bar equipment, ex. cond.	350.

4900 West 73rd St., Cleveland, Ohio

We have what you want

ENGINE LATHES

14"x 6' LeBlond, l. c. g. and chuck.
14"x 6' Hamilton.
14"x 6' Porter, compound rest and taper attachment, l. c. g.
16"x 8 Lodge & Shipley, old style, compound rest, q. c. g.
16"x 8' Hendey, c. r. and t. a., q. c. g.
16"x 8' Bradford, c. r., loose change gear.
16"x 8' Monarch, compound rest, standard pattern.
18"x 8 Prentice, compound rest, l. c. g., chuck.
18"x 7' Fulton heavy duty friction hd. pl. turning lathe, pan bed, dbl. tool post and countershaft, new.
18" x8' Porter, 4-step cone, s. b. g., q. c. g. engine lathe, complete, new.
18"x 8' Superior, c. r., q. c. g.
18"x10' Star, 4-s. c., s. g., with 16" 4-jaw ind. chuck.
20"x 8' Reed friction head, with turret on carriage.
20"x10' Boye & Emmes, c. r., q. c. g.
24"x10' Greaves & K., c. r., q. c. g.
24"x10' Boye & Emmes, c. r., q. c. g.

TURRET LATHES AND SCREW MACHINES

2"x24' Jones & L. g. h. flat turret.
No. 00 Brown & Sharpe auto.
No. 0 Brown & Sharpe auto., (2).
12" W. & S., friction head.
12" W. & S., friction head, with set-over turret.
14" W. & S., friction head, (2).
16" W. & S., friction head.
No. 4 Warner & Swasey, p. h., a. c. and b. f.
No. 2 Warner & Swasey, p. h., a. c. and b. f.
No. 4 Warner & S., g. f. h., a.c. and b. f.
No. 3 Foster g.f.h. turret screw mch., with p. f. carriage and turret.
No. 55 Nat'l Acme 4-spdl. auto.
2½" Cleveland model "A" auto. screw mch., with 5-hole turret.
1½" Cleveland model "A" auto. screw mch., with 5-hole turret.
18" Libby, factory rebuilt.
No. 2-G Brown & Sharpe automatics (2).
No. 2 Brown & Sharpe turret forming (2).
1"x7" Millholland, pl. hd., auto. ck., bar fd., hand fd., cross slide and turret, complete, new.
1"x7" Millholland turret screw mch., pl. hd. auto. ck., bar feed hand fd. cross slide, with power fd. tur., new.

DRILLING MACHINES

No. 1-S Garvin duplex, (2).
3' American sensitive radial with t. a. and elevating table.
4' Mueller, gear box, sgl. pulley dr.
5' and 6' Americans, tr. grd., 8-speed change, gr. box, sgl. pulley drive.
21" Aurora W. & L., square base, stationary head.
6' Western, with speed box, tap. att.
3' Dreses, cone drive, tap. att.
5' American triple purpose, with speed box.
26" Cincinnati sliding head, b. g. and p. f.
14 3-spindle Henry & W., h. s., b. b.
14" 4-spindle Henry & W., h. s., b. b.
12-spindle Moline, cam fd., two tbl.
3-sp. Edlund, high sp., ball bearing.
No. 22 Colburn, sgl. sp., hvy. duty, 1¼" cap., with solid spindle and flange for receiving multiple drill heads, new, (2).
No. 44 Colburn, sgl. sp. heavy duty, 2½" cap., with solid sp. and flange for receiving multiple drill heads, new, (2).
Colburn horizontal duplex drill, 2½" cap. with rotating table, arranged for motor drive, new.
No. 34 Demco high speed bench drill with C spindle, new.

The Strong, Carlisle & Hammond Co.,

Let us have your inquiries

MILLING MACHINES

No. 0 Bickett, hand, bench type, (3).
Toledo hand milling machines.
No. 1½ B. & S., cone dr., universal, complete.
No. 1 Brown & Sharpe vertical.
No. 4 Brown & S., cone drive, univ.
No. 3-B heavy B. & S. plain, constant speed.
Type C Becker vertical, constant speed drive.
No. 1½ B. & S. cone drive, univ.
24"x18"x60" Ingersoll, Farwell vertical milling head.
25"x7½"x18" Oesterlein universal, vertical attachment.
No. 1-Y Brown & Sharpe plain.
No. 12 B. & S. manufacturing.
13-B Brown & Sharpe, plain manufacturing, (2).

METAL CUTTING TOOLS AND SQUARING SHEARS

No. 3 Atkins band saw, belt driven, new, (2).

GEAR CUTTERS AND HOBBERS

No. 18 Gould & Eberhardt vertical, for spur & spiral.
26" No. 3 Brown & Sharpe automatic

SHAPERS AND PLANERS

16" American, b. g. c., complete.
16" Gould & Eberhardt crank, gear box, single pulley drive.
29" Hendey friction, (2).
16" Smith & Mills, back grd. crank.
22"x22"x 5' Putnam planers, (2).
24"x24"x5' Cincinnati, one head.
30"x30"x10' Woodward & Powell, three heads.
72"x72"x26' Fitchburg, four heads.
30"x36"x16' Cleveland open side, one rail, one side, arranged for mtr. dr.

CENTERING MACHINES

Centering machines, single spindle Cadillac, (2).

GRINDERS

No. 1 Brown & Sharpe universal.
No. 3 Brown & Sharpe universal.
No. 1 Bath universal.
No. 13 B. & S. univ. and tool, (2).
No. 3 Diamond wet tool grinder with drop apron, new.
No. 4 Diamond wet tool grinders with drop apron, new, (2).
No. 10 Brown & Sharpe plain.
No. 14—30" B. & S. plain cyl., (2).
No. 14—48" B. & S. plain, (2).
6"x30" Norton plain, (2).
No. 24 Landis plain.
8" Heald rotary surface grinder with magnetic chuck.
No. 6-A Bryant internal.
No. 1 LeBlond cutter grinder.
J. B. Point "Yankee" drill grinders, complete, new, (2).
Type "DE" Hisey-Wolf internal.
No. 11 Brown & Sharpe pl. grinders.
Plain emery wh'l stand with column.
No. 1 Woods cutter and reamer grinder, complete, new.
No. 2 Woods cutter and reamer grinder, complete, new.
No. 2½ Woods cutter and reamer grinder, complete, new.
20" Whitney wet tool grinders, complete with countershaft, new, (2).
C3A Grand Rapids duplex drill grinders with wet att., new, (2).

MISCELLANEOUS

Bolt cutter, 1¾" National 2-spindle, with Landis heads.
Boring or drilling machine, No. 1-S Garvin duplex horizontal, (2).
Boring mill, 34" Colburn vertical, swivel turret head.
Boring mill, 72" Niles vertical, two swivel heads.
Broach, No. 2 double Lapointe.
Filing machine, No. 2 Cochrane-Bly.
Marking machine, Etchograph.
Oil extractor, No. 150 Curtis.
Pipe machine, 8" Jarecki, No. 88.
Pipe machine, 4" Oster.
Profiler, No. 12, 2-spdl. P. & W. vert.
Scleroscopes, Shore, (4).

Cleveland, Ohio; Detroit, Michigan

Good Tools—Priced Right

DRILLS

No. 3 Baush High Speed Multiple Spindle Drill, 20"x40" rectangular head; ten spindles 1¾". Condition good ..... $1000.
28" Barnes Sliding Head, tapping attach., comp. table. Condition good ..... 350.
(NEW) 26" Kern Sliding Head, back gear, power feed, tapping attach. ..... 600.

GRINDERS

Wilmarth & Morman Twist Drill Grinder, motor drive, capacity ½" to 3½". Condition good ..... $ 175.
No. 1 Cincinnati Cutter and Tool Grinder ..... 150.
No. 15 Bryant Semi-Automatic Hole Grinder. Like new ..... 900.
10"x30" Fraser Self-Contained Universal. Condition fair ..... 375.
No. 190 Greenfield Universal Cutter and Tool. Condition good ..... 150.
No. 5 Oliver Twist Drill, motor drive, capacity ¼" to 2¾". Like new 450
6"x32" Norton Plain Grinder. Condition good ..... 400.
No. 10 Brown & Sharpe Plain Grinder, 6"x20". Condition good ..... 125.
No. 11 Lumsden Plain Ball Bearing, with cup wheel. New ..... 275.

MILLERS

No. 6 Whitney Hand Miller. Condition good ..... $ 150.
No. 10 Pratt & Whitney Hand Miller ..... 150.
No. 3H LeBlond Plain Cone Type Miller. Like new ..... 1300.
No. 0 Brown & Sharpe Plain Miller. Condition good ..... 300.
No. 0½ LeBlond Plain Miller ..... 400.
No. 33 Kempsmith—Lincoln Type—Miller ..... 750.
No. 32 Kempsmith Miller. Condition good ..... 350.
Taft-Pierce Thread Miller ..... 400.
Briggs Type A Miller, 16" table feed. Condition good ..... 250.
No. 2 Knight Vertical Miller ..... 600.
No. 3 LeBlond Universal Miller ..... 1300.

SAWS

No. 15 Lea-Simplex Type BB Cold Saw. Condition very good ..... $ 600.
20" Silver Belt Drive Band Saw ..... 65.
6" Napier Metal Band Saw ..... 150.

TURRET LATHES AND SCREW MACHINES

No. 3 Warner & Swasey Plain Head Screw Machine ..... $ 175.
Defiance Hand Screw Machine 16" swing, pan bed, friction head ..... 350.
No. 6 Brown & Sharpe Turret Screw Mche. with roll fd. Condition good ..... 800.
No. 2 Warner & Swasey Hollow Hex. Srew Machine ..... 400.
1"x15" Pratt & Whitney Turret Screw Machine. Condition good ..... 500.
No. 3 Foster Turret Lathe. Condition good ..... 300.
No. 3 Foster Turret Lathe with auto. Chuck. Condition good ..... 300.

MISCELLANEOUS

LaPointe (Hudson Mass.) Broaching Machine, with 2" diameter screw 48" long. Condition good ..... $ 300.
4" Hurlburt-Rogers Cone Type Cutting-Off Mche. Condition very good ..... 250.
No. 425 Standard Fuel and Engineering Company High Speed Furnace, with heating space 9"x14" ..... 75.
24" G. & E. Gear Hobber. Cap. 24"x10"x5", 6-pitch. Condition fair ..... 325.
18" Gleason Bevel Gear Generator. Condition good ..... 800.
No. 6 Fellows Gear Shaper ..... 500.
No. 5 Williams-White Drop Hammer. Weight of ram 600 lb. ..... 350.
No. 1 Gray Sheet Metal Cutter, cap. 3/16"; depth of throat 34". Like new ..... 400.
No. 1 National Acme Screw Slotter. Condition good ..... 125.
12" Rochester Tooth Rounder ..... 300.

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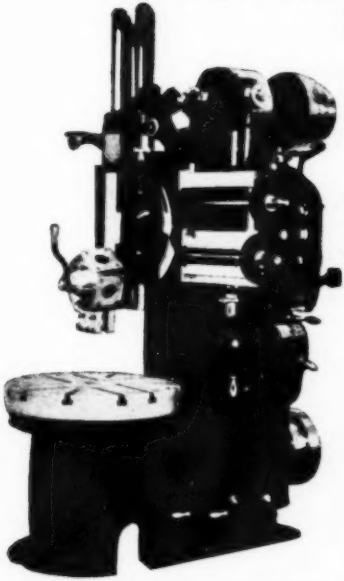

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Turret Lathes

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Grinders

Planers

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38"x16' Pond Lathes.
26"x12' Putnam H. D. Lathe.
18"x8' Mueller Q. C. G.
18"x8' Cisco Geared Head Lathe.
13"x21"x8' Star Gap Lathe.
14"x6' and 8' Carroll Jamieson Q. C. G. (4).
28" Gisholt Turret Lathe, Belt Driven.
4" Horizontal Boring Mills.
42" Bullard Vertical Boring Mills
37" Baush Vertical Boring Mill.

MILLERS AND GRINDERS

No. 4 Cincinnati Plain Miller.
No. 3 Kempsmith Plain Miller.
No. 3 Kempsmith Universal Miller.
No. 3 Becker Vertical Miller.
No. 2½ LeBlond Plain Miller.
No. 2 Kempsmith Plain Miller.
No. 1 Cleveland Plain Miller, S. P. D.
No. 13 Garvin Plain Millers, (2).
4"x30" P. & W. Cylindrical Grinder.

PNEUMATIC RIVETERS

Allen, 72" reach, 12" gap, 10" cyl.
Allen, 36" reach, 12" gap, 10" cyl.
Allen Compression (Angle) lever riv., 11½" dia. cyl., 9⅝" reach, 14" gap.

RADIALS AND DRILL PRESSES

6' Bickford Plain Radial Drill.
4' American Sensitive Radials (3).
Barr 6-Spindle Sensitive Drill.
6 Spindle Gardam Multiple Drill.
No. 25 Foote-Burt Hvy. Duty Drill.
24" Weigel Sliding Head Drill.

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24"x24"x10' Chandler Planer.
36"x30"x16' Whitcomb-Blaisdell.

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1100 lb. Bell Steam Forging Hammer.
1100 lb. N. B. P. Forging Hammer.
2000 lb. Bell Steam Forging Hammer.
200 lb. United Upright Pwr. Hammer.
200 Beaudry Upright Pwr. Hammer.
40 lb. Bradley Helve Hammer.
36" Cleveland Style FF Punch & S.
36" Ironton S. E. Punch & Shear.
20" Hills & Jones S. E. Punch & S.
Kling ¾" Rotary Splitting Shear.

MISCELLANEOUS

24" Brown & Sharpe Gear Cutter.
No. 3B LaPointe Broaching Machine.
4"—6"—8" and 12" Pipe Machines.

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16"x8' P. & W., motor.
18"x8' LeBlond, motor.
19"x8' LeBlond, motor.
21"x10' LeBlond, motor.
21"x12' LeBlond, motor.
21"x22' LeBlond, motor.
25"x18' LeBlond, motor.
26"x17' Pond, motor.
28"x30" Pond, motor.
30"x45' Pond, motor.
36"x18' Pond, motor.
42"x17' Pond, motor.
54"x28' American, motor.

Turret Lathes

2" P. &W., motor.
3" P. & W., belt.
34" Gisholt, motor.

Planers

30"x30"x12' Pond, 4 hds. rev. m. d.
42"x42"x26' Pond, 4 hds. rev. m. d.
48"x48"x20' Pond, 4 hds. rev. m. d.
48"x48"x27' Pond, 4 hds. rev. m. d.
72"x72"x36' Pond, 4 hds. rev. m. d.
96"x72"x25' Pond, 4 hds. rev. m. d.
144"x120"x26' Pond, 4 hds. rev. m. d.
10'x10'x34' Betts, 4 hds. belted m. d.

Upright and Radial Drills

20" Barnes sta. hd. plain, belt.
24" Aurora sliding head, belt.
24" Aurora sliding head, motor.
27" G. & E., motor.
5' Right Line Full Universal motor.
6' Ridgway Plain, motor.

Millers

Whitney Hand, belt.
No. 24 B. & S. Plain, belt.
No. 3-H LeBlond Universal, belt.
No. 4 Cincinnati Universal, motor.
No. 6 Becker-Brainerd Vertical, belt.

Emery Wheel Stands

No. 7 Bridgeport, motor.
12" Ransom, 2 H. P. motor.
24"x4" Ransom, 5 H. P. motor.
18" Grinder and Polisher, belt.
30" Grindstone Frame, belt.

Shapers and Slotters

6" P. & W. Vertical Shaper, motor.
14" P. & W. Shaper, belt.
20" Bement sgl. hd. Shaper, motor.
10" Bement Slotter, motor.
15" Bement Slotter, motor.
22" Bement Slotter, motor.

Grinders—Cylindrical and Tool

P. & W. Thread Mill Cutter, belt.
LeBlond No. 1 Cutter, belt.
No. 3 B. & S. Cutter, belt.
No. 2 Sellers Tool, belt.
No. 3 B. & S. Universal, belt.
18"x95" Norton Plain, belt.

Gear Cutters

24" Gleason Bevel Planer, belt.
36" No. 4 B. & S. Spur Cutter, belt.
48" Gleason Bevel Planer, belt.
64"x20" G. & E. Spur, belt.

Horizontal and Vertical Boring Mills

3½" Sp. Ridgway Hor., motor.
4½" Spindle Bement Hor., motor.
4½" Sp. Bement Duplex Hor., mtr.
5" Sp. Betts Horiz., belt.
5½" Sp. 80" Bement Horiz., belt.
6" Niles Vrt. B. & T Mill, motor.

Miscellaneous

Bement 1100 Lbs. S. F. Stm. Hammer.
48" 200-ton Niles Hyd. Wheel Press, belt.
18" Blade Espen-Lucas Cold Saw.
No. 7-B Racine saw, motor.
American No. 4 Oven Furnace.

Foundry Equipment

7'x14' Norcross Jolting Mach.
20" Norcross Jarring Mach.
14"x16" Mumford Molding Mach.
24"x24" Tabor Molding Mach.
Sellers Centrifugal Sand Mixer, Motor.
Whiting No. 40, 36x52" Tumbler, Motor.
20-Ton Std. Worm Gear Ladle.
7'x12'x¾" Air Tank.
Nos. 6 and 9½ Whiting Cupolas.

Niles 75-Ton 4-Motor Electric Traveling Crane, 49' span, with 10-Ton Aux. Hoist, 3-60-440 A. C. Motors, practically new, located at La Salle, Ill.

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NEW 3 PHASE MOTORS CHEAP. 3 H. P. $54.50; 5 H. P. $65.50

LATHES

12"x 5' Cleveland, geared head.
14"x 6' Carroll-Jamieson, new, q. c.
14"x 6' Hamilton, grd. hd., motor dr.
14"x 6' Monarch, quick change.
14"x 6' Sebastian, grd. hd., m. d.
14"x 8' Sidney, double back geared.
14"x 6' Hamilton, style B.
16"x 6' Monarch, motor drive.
18"x10' American, quick change.
20"x 8' American, geared head.
20"x10' Hamilton, rapid production.
20"x10' Prentice, taper attachment.
22"x8'6" Greaves & Klusman.
24"x12' Bradford.
24"x24' Prentice, with raising block.
8x60" & 3½x60" Fitchburg, Lo-Swing.

TURRET LATHES and SCREW MACHINES

Acme ⅞" cap., wire feed column.
No. 4 Defiance, 1⅛" capacity.
1⅛" capacity Smurr & Kamen.
1½" Milholland.
2x24 and 3x36 J. & L.
No. 1 Foster, 15/16" capacity (2).
Warner & Swasey No. 2.
No. 52 National Acme.

SHAPERS

14" Niles, traveling head.
14" Steptoe, crank.
16" American tool room.
16" O. & S., b. grd., new, low price.
16" Cincinnati b. g., motor drive.
16" Barker back geared crank.
24" O. & S. back geared crank.

PRESSES

No. 10 and No. 15 Excelsior, foot.
Nos. 5 and 6 Toledo, o. b. i.
Nos. 3-A & 5-A Willard inclinable.
Nos. 1½, 2, 2½ & 4 Robinson, new.
Enco, bench, for radio parts.

DRILLS and RADIALS

No. 1 Baush multiple.
Baush 10 spindle, arranged for 16.
Electric Drills, Black & Decker.
No. 4 Duntley electric.
22", 24", 26", 28" and 32", sliding hd.
6' Ceiling drill.
25" Kokomo high speed.
4-spindle Reed sensitive.
44" Stover.
Hole Hog, No. 66-D, 7-spindle.

MILLING MACHINES

No. 1 Kempsmith universal, new.
No. 2 Kempsmith plain.
No. 3 Kempsmith plain, new.
No. 3 Cincinnati universal.
No. 5-C Becker, vertical.
No. 25 Becker plain, power feed.
No. 2 H Brown & Sharpe plain.
Oesterlein 24x7½x18 plain.
Briggs "A" high duty, 24x8" table.
No. 7 Becker, Lincoln type.

GRINDERS

Nos. 1 & 78 W. & M. surface.
6"x15" Fitchburg plain.
12"x36" Cincinnati universal.
16"x42" Landis universal.
36" and 66" Yates plate.
No. 60 Heald cylinder.
Schmitt cylinder grinder.
No. 3 Ohio universal, tool and cut.
J B X, W. & M. tool and cutter.
No. 10 Besly 18" double disc.
No. 20 Bryant, chucking.

MISCELLANEOUS

Band saw, Clark, compound.
Band saws, Napier 4"x4", 10"x10".
Blower, No. 6 Pequa, pressure.
Blower, positive pressure, Leiman style "F."
Boring mill, Colburn No. 3, tur. hd.
Boring mill, Sellers 50" car wheel.
Boring mill, 72" column.
Boring mill, vertical, two heads.
Brake, 10', 18-gauge metal.
Broaching mchs., 1 and 3 LaPointe.
Compressors, 6x8, 8x8 and 9x8.
Drawing tables, adjust., 42"x6' top.
Gear cutter, No. 3—26 B. & S.
Gear miller, Bilton No. 1.
Hammer, No. 1 Pettingell.
Hammer, 150 lb. Standard drop.
Pipe machines, 2", 4" & 6".
Pumps, Gould triplex, 6½x8".
Punch & shear, ½x½x10" throat.
Riveting hammers, High Speed Nos. 2, 3, 4 & 5-A.
Scale, 1500 lb. Toledo, dial type.
Shear, 60" Peck, Stow & W., 18 ga.
Shear, No. 362 Robinson.
Shear, No. 20 Quickwork, 30" throat.
Shear, circular, Pettingell, 60" thrt.
Tapping machine, Acme 6-spindle.
Threading mche., W. & P. 2-spindle.

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16"x6' Hendey.
12"x5' Pratt & Whitney toolroom.
11"x4' Sidney.
14"x6' American, q. c.
14"x6' Hendey.
14"x6' Monarch.
16"x8' Springfield.
16"x6' Sidney.
18"x8' Hendey.
18"x6' Monarch.
20"x8' Monarch.
22"x10' Hamilton.
22—44x10' Harrington Gap.

MILLING MACHINES

No. 1½ Brown & Sharpe univ.
No. 2B Hendey universal.
No. 2½ LeBlond heavy universal.
No. 2 Cincinnati universal.
No. 2B Hendey plain.
2—No. 2 Cincinnati plain.
3—No. 3 Cincinnati a. g. plain.
3—No. 3 Cincinnati cone plain.
2—No. 4 LeBlond cone plain.
3—No. 2 Kempsmith plain.
No. 3 Cincinnati a. g. vertical.
No. 3 Cincinnati a. g. vertical.
No. 4 Cincinnati a. g. vertical.
No. 6 Becker cone vertical.
No. B-1 Becker cone vertical.
2—Hendey duplex horizontal.

DRILLS

6—26" Barnes, b. g., p. f.
24" Rockford 4-spd.
22" Rockford 2-spd.
65-D-5 Moline holehog.
26" Barnes a. g. motor driven.
No. 17 Foote-Burt 5-spd. rail drill.
4' Mueller radial.
3' Bickford radial.
4-spindle Allen, h. s., b. b.
4-spindle H. & W., h. s., b. b.
4-spindle a. g. Barnes, 26".
6-spd. Allen h. s., b. b. drill.

PRESSES

4 No. P-4 Ferracute.
No. 409-B Bliss toggle press.
No. 93-B Toledo d. c. grd. press.
No. 68 Bliss d. a. press.
No. 24 Mich. grd. horning press.
No. 54½ Toledo s. s., s. c. press.
No. 55 Toledo s. s., s. c. press
and many others of all sizes.

TURRET AND SCREW MCHS.

2—No. 1 Foster.
2—No. 2 Warner & Swasey p. h.
No. 6 Warner & Swasey f. h.
2—No. 2 Foster.
No. 3 Foster.
2—No. 4 Warner & Swasey p. h.
3—No. 4 Southwark p. h.
No. 24 New Britain.
3—No. 6A Potter & Johnston.
2¼" Gridley 4-spd.
4¼" Gridley 1 spd. M. D.
2—Jones & Lamson, 2 spd.
3x36 Jones & Lamson, 1 spd.
2A Warner & Swasey universal.

GRINDERS

6—No. 65 Heald cylinder.
Nos. 2 and 3 Wilmarth & M. surf.
3—6x32 Norton plain.
No. 10 Brown & Sharpe plain.
No. 11 Brown & Sharpe plain.
12x36 Queen City plain.
6x36 Landis plain.
No. 2 Bath universal.
No. 2 Brown & Sharpe universal.
No. 3 Landis universal.
No. 15 Bryant internal.
No. 10 Bryant internal.
Worcester internal.
No. 6 Gardner disc.

MISCELLANEOUS

36 Lb. Bullard vertical boring mill, side head.
30"x30"x8' Nelson, planer.
36x36x12' Bickett planer.
4—No. 1 Garvin vertical tappers.
3—No. 2 Garvin vertical tappers.
10x10 Ingersoll-Rand air comp.
19x14 C. P. air compressor.
24x16 Bury air compressor.
1500 Lb. Chambersburg steam hammer.
2500 Lb. Chambersburg steam hammer.
7500 Lb. Chambersburg steam hammer.
10" Allis Chalmers centr. pumps.
14x16x16 Burnham steam vacuum.

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251 St. Aubin Ave., Detroit, Mich.

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ATTRACTIVE PRICES **MONEY BACK GUARANTEE**

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Lathes

5—10x5 Pratt-Whitney tool room.
3—14x6 Hendey tool room.
6—16x6 Hendey tool room.
1—18x8 Hendey tool room.
2—18x8 Greaves-Klusman grd. hd.
1—18x8 Lodge-Shipley heavy duty.
1—18x36x12 Rahn-Larmon gap.
1—20x42x6 Fay Scott gap.
1—24x10 American geared head.
1—25x12 LeBlond heavy duty.
1—28x22 Boye-Emmes motor drive.
1—27x18 LeBlond heavy duty.
2—30x12 American geared head.
1—36x60x12 McCabe 2-in-1.
1—30x14 Lodge-Shipley cone drive.
1—30x20 Pond triple geared.
1—36x29 American geared head.
1—36x70 American geared head.
2—36x20 American geared head.
1—36x60 Bridgeford boring.
1—42" N.-B.-P. car wheel.
1—42x22 American geared head.
8—42x39 Putnam geared head.
1—44x34 Pond triple geared.
1—48x36 Pittsburg motor drive.
2—50x36 Pittsburg geared head.
2—54x34 Bement triple geared.
1—60x35 Bement triple geared.
1—72"x56' N.-B.-P. triple geared.
1—LeBlond crankshaft.

Millers

1—No. 5 Cincinnati intermittent fd.
1—No. 5 Cincinnati h. p. plain.
1—No. 4 Cincinnati h. p. plain.
1—No. 4-G LeBlond plain.
1—No. 3 Cincinnati h. p. plain.
1—No. 3-H LeBlond plain.
1—No. 3-A Brown & Sharpe plain.
1—No. 2 Hendey geared hd. plain.
1—No. 2—AS Milwaukee pl. new.
1—No. 1 Brown & Sharpe univ.
1—No. 1½ Brown & Sharpe univ.
1—No. 2 Kempsmith universal.
1—No. 5 Brown & Sharpe vertical.
1—No. 4 Cincinnati vertical.
1—No. 4 Cincinnati intermittent fd.
1—No. 3 Cincinnati vertical.
1—Nos. 29 and 22 Garvin vertical.
2—24x24x6' Ingersoll.
1—48x33x20' Ingersoll planer type.

Drills

2—7' Western heavy duty.
1—6' Niles-Bement-Pond univ.
1—6' Bickford universal radial.
2—5' Western heavy duty.
2—4' Hammond plain.
1—5' American trip. purpose radial.
1—5' N.-B.-P. semi-universal.
1—3½ Cincinnati-Bickford, gr. box.
2—3' Mueller plain.
1—3' Western plain.
1—No. 32 Natco, multiple spindle.
1—No. 14 Natco, multiple spindle.
6—No. 13 Pratt & W. mult. spdl.
1—No. 3 Baush multiple spindle.
1—No. 1 Pratt & W., deep hole.
3—42" Cincinnati-Bickford, s. h.
2—32" Aurora, s. h.
2—26" Barnes, all-geared.
5—Four-spindle H. & W. b. b.
3—24" Cincinnati, s. h., tapping.
1—3-spindle Allen, ball-bearing.
1—3-spindle H. & W., ball-bearing.
1—No. 1-S Garvin duplex.

Automatics

2—No. 2G Brown & Sharpe.
2—No. 0 Brown & Sharpe.
5—No. 00 Brown & Sharpe.
3—2½" Gridley, 4-spindle.
6—9/16 Gridley, 4-spindle.
1—1" Gridley, 4-spindle.
9—2½" Gridley single spindle.
2—3½" Gridley single spindle.
4—4½" Gridley single spindle.
1—No. 6-A Potter & Johnston.

Grinders

2—No. 16 Blanchard vertical.
1—14x96 Norton cylindrical.
1—16x48 Landis crankshaft.
3—14x50" Norton cylindrical.
6—6x32 Norton cylindrical.
1—14" Pratt & Whitney vertical.
1—30x84 Diamond face.
2—16x52 Landis plain.
5—No. 70 Heald internal.
5—No. 65 Heald Grinders.
5—No. 60 Heald Grinders.
1—No. 13 Brown & S. universal.

Boring Mills

6—24" Bullard New Era.
1—36" Bullard New Era.

Write for "Simmons Pictorial News"

Simmons Machine Tool Corp.

NEW YORK	ALBANY	BUFFALO
149 Broadway	1212 Troy Road	88 Exchange St.

Attractive Prices To Move Stock

BORING MILLS:
Detrick Harvey Post Mill 4⅞" bar.
Niles Post Mill 6½" bar.
36" American ..... $350.
42" Bullard Vertical ..... 850.
64" Betts Vertical ..... 650.
84" Betts Vertical.
7' 10" Betts Vertical.

DRILLS:
20" Silver B. G.
24" Weigel B. G. ..... $350.
24" Sibley B. G.

LATHES:
4' Western Radial, m. d.
12"x5' Seneca Falls.
18"x10' Chard, h. s., t. a.
24"x10' Putnam, t. a.
24"x12' Reed, h. s.
24"x12' New Haven.
26"x16' Prentice, taper attachment.
30"x18' Lodge & Shipley, m. d.
36"x17' Gleason Triple Geared.
42"x16' New Haven triple geared.
24" Libby Turret.
Lewis Roll Lathes.

MILLING MCHES.:
No. 1 U. S. Hand.
No. 2M Cincinnati and No. 2 Kempsmith Plain.
No. 7-H Becker, Lincoln type.

PUNCH & SHEAR:
Canedy-Otto, hand power, ½"x½" ..... $ 45.
No. 5 Long & A., d. e., 10" throats, cap. ⅝" thru ⅝".
No. 45 Buffalo S. E. Punch & Shear.
Cleveland E. F., 36" throat.
No. 2 Hilles & Jones hor. punch, 8" throat.
Beatty s. e., 48" throat, capacity 1¼"x1¼".
Kling Bros. Dbl. Angle Shear, cap. 6"x6"x¾", m. d.

GRINDERS:
No. 1 Wilmarth & Morman Surface.
No. 55 Heald Internal and No. 96 Ott Piston.
10"x96" Norton Grinder.
Bridgeport Knife & Drill.
D. E. Emery, 10" wheels ..... $ 25.

SHAPERS:
24" Gould-Eberhardt, b. g.
28" Ohio Double Geared.
30" Gould & Eberhardt.

MISCELLANEOUS:
Air Compressor, Chicago 12x14, cap. 275 cu. ft.
Blower, No. 2 Roots Rotary.
Bulldozer, No. 2 Williams-White.
Cold Saw, Nutter-Barnes, capacity 4½" round.
Crane, Panama Portable, 2½-ton ..... $ 60.
Crane, Brown 15-ton, 8-wheel locomotive.
Gear Cutter, No. 6 Brown & S., cap. up to 72"x13".
Planers, Cincinnati 48"x44"x12' and 60"x60"x20'.
Planer, Flather 48"x48"x16' heavy duty.
Planer, Cincinnati 42"x36"x12', 2 heads.
Planer, Pond 72"x18', 2 heads.
Planer, Detrick & H. Openside, 96"x72"x26'.
Press, No. 3½ Bliss Toggle Drawing.
Riveters, Allen Portable Pneumatic; Nutcracker and Horseshoe 9", 25½" & 35" reach.

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1447 Oliver Building, PITTSBURGH, PA.

Forging, Bolt, Nut, Rivet and Structural Machinery

1", 1½" 2", 2½", 3", 5" Ajax Upsetters.
¾", 1", 1¼", 2½", 3" and 4" Acme Upsetters.
1" and 2" National Upsetters, iron beds.
Nos. 2, 4, 5 and 7 Williams-White Bulldozers.
50, 75, 100, 150, 200 and 500 lb. Bradley Upright Hammers.
40, 60, 80, 100 and 200 lb. Bradley Cushioned Helve Hammers.
2000 lb. Erie Single Leg Steam Forging Hammer.
800 lb. Chambersburg board drop Hammer.
1300 lb. Miner & Peck, 6 poppet drop hammer.
No. 14 Erie Geared Trimming Press, wt. 22,000 lbs.
No. 52 Bliss straight side press.
No. 5 Stiles Single Geared Press, Motor Drive.
No. 2 Doelger-Kirsten Alligator Shear, m. d., cap. 3" round.
1", 1½" 3", 4" Single Spindle Landis Threading Machine.
½", 1", 1½", 2½", 2-spindle Landis Threading Machines.
1½", 2", 2-spindle Acme Class A Threading Machines.
½", 1", 1½" 6 & 8-spindle Vertical Semi-auto. Nut Tappers.
¼", ⅜", ½", ⅝" and 1" Thread Rollers.
11 Waterbury and Manville Cold Headers, 3/16" to 1".
Long & Allstatter Size B Dbl. End Punch, 18" thrt. each end, 2¼" thru 1½".
Rock River Sgl. End Punch, 16" thrt., arch. jaw, cap. ¾" thru ¾".
Beatty Sgl. End Punch, 26" thrt., plain table, cap. 1" thru 1".
No. 6 Whiting Sgl. End Punch, arch. jaw, cap. ¾" thru ¾".
Allen Pinch Bug Riveter, cap. ⅞" rivets.
Allen C Frame Riveter, 26" throat, 15½" gap, cap. 1" rivets.
Long & Allstatter No. 2 Horizontal Punch and Beam Bender.
No. 2 Ryerson high speed Friction Saw, cap. 18" beams.
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12' Wall Radial Drill for structural work.
Wagenhorst Blueprinting Machine.
Detroit 5-spindle Semi-automatic Drills.
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LOOK—THESE—OVER

LATHES

16"x10' Cincinnati, q. c.
16"x 6' Hendey, q. c. g.
18"x 8' Bradford, q. c. g.
18"x 8' Reed-Prentice grd. hd.
19"x10' LeBlond, q. c. g.
38"x28' American, geared head.
26"x14' American, l. c. g.
46"x17' New Haven, triple geared.

MILLING MACHINES

No. 1 Cincinnati universal.
No. 1½ Cincinnati universal.
No. 1½ Valley City universal.
No. 3 Cincinnati plain.
No. 1½ American plain.
No. 5 LeBlond plain, motor drive.
No. 1½ Brown & Sharpe, plain.
No. 3 Brown & Sharpe plain, (2).
No. 3 LeBlond plain.
No. 3 B. & S. vert., s. p. drive.

RADIALS AND DRILL PRESSES

3' Carlton, G type, gear box drive.
4' Fosdick, s. p. drive.
4' Bickford plain, cone drive.
6' Dreses, motor drive.
24" Hoefer, stationary head.
24" Aurora, sliding head.
26" Hoefer, stationary head.
1 and 2 spindle Allen, b. b. sensitive.

PUNCH PRESSES

No. 18 Bliss, o. b. inclinable. (4).
No. 2½ Consolidated, o. b. inc.
No. 3-A Willard, o. b. inc.
No. 3 Bliss, stiff back.
No. 31 Toledo, stiff back.
No. 17 Williams & White, 24" thr.
No. B Long & Allstatter, 18" thr.
No. 6 Whiting, single end, 12" thrt.
No. 3 Bliss dble. crk., 36" bet. hous.
No. 6 Waterbury-Farrel, stiff back.
No. 64 Consolidated s. s., 18" bet.
No. 15 Toledo, 18" throat, (2).

PLANERS AND SHAPERS

24"x 6' Powell, 1 head.
30"x 8' Cincinnati, 1 head.
48"x36"x12' Cincinnati, 2 heads.
24" Kelley shaper, b. g.
20" American b. g. shaper.
16" Ohio b. g. shaper
16" Smith & Mills, cone drive.
16" Ohio. b. g. shaper.
14" Potter Johnston shaper, s. p. d.
16" Gould & Eberhardt shaper.

GRINDERS

No. 60 Heald, long table, (2).
No. 60 Heald, short table.
Thompson universal grinder.
No. 2 Brown & S. surface grinder.
12x48 Safety surface grinder.
Norton tool and cutter grinder.
No. 1½ Cincinnati, t. and c. grinder.
No. 3 Ohio univ., t. and c. grinder.
No. 23 Landis, 16x42".
16x66 Queen City plain.

MISCELLANEOUS

Bending rolls, 48" Niagara.
Bolt cutters, 2½, 1½" & 1" Acme.
Boring mill, 30" Bullard, cone drive, turret head.
Boring mill, 36" Gisholt turret head, cone drive.
Boring mill, 42" Bullard vertical.
Boring mill, Fosdick 3" horizontal.
Boring mill, 18' Niles, 2 heads.
Brake, hand, 10' Robinson, 16 gauge.
Chain hoists, various sizes.
Gas furnaces.
Gear cutter, No. 13 B. & S., spur & bevel.
Hammer, steam, 800 lb. Niles.
Keyseater, No. 1 Baker.
Millers, hand, (6).
Presses, 30 & 50 ton Lucas forcing.
Press, 44" Wood hydraulic tire press.
Shear, 60" power square, 14 gauge.
Slotter, 10" Niles vertical.
Tooth rounder, 12" Ingle.
Turret lathe, No. 2 W. & S. (2).

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The Jones Machine Tool Co.

Front & Pike Sts., Cincinnati, Ohio

Every Tool In This List Is Priced Right
An Inquiry Will Convince You

LATHES

14"x6' Hendey Quick Change Gear.
14"x6' American Quick Change Gear, Taper Attachment.
16"x6' Bradford Quick Change Gear, Taper Attachment.
16"x6' LeBlond Quick Change Gear.
18"x8' Walcott Semi-Quick Change Gear.
20"x8' LeBlond D. B. G. and Quick Change Gear.
26"x9' Bridgeford D. B. G. and Q. C. G. (Brand New) $1250.00.

PLANERS

26"x26"x8' Gray, one head.
32"x32"x14' Pond, two heads.

PUNCH PRESSES

No. 1 Toledo, Open Back Inclinable.
No. 18½ Holden, Open Back Inclinable.
E. G. 22 Ferracute, Geared Arch.
No. 54 Cleveland, Straight Side.

GRINDERS

No. 60 Heald Cylinder, 36" table and new type fixture.
Greenfield Tool & Cutter Grinder.
No. 1 LeBlond Grinder, plain equipment.
No. 1 Brown & Sharpe Universal Grinder.
No. 3 Modern Universal Grinder.
No. 6 Besly Double Disc Grinder.
No. 10 Besly Disc Grinder, with press.
No. 6 Bryant Chucking Grinders.
No. 75 Heald Internal Grinders.

SHAPERS

24" Queen City, heavy duty, Back Geared.
16" Crank Shaper.

MISCELLANEOUS

2" Pratt & Whitney Spline Milling Machine.
2 Spindle Acme Reversing Nut Taper.
No. 2 Garvin Screw Head Shaving Machines.
1½" Cincinnati-Acme Turret Lathe.
No. 13 Garvin Plain Miller.
No. 14½ Becker-Brainard Universal Milling Machine.
50 lb. Beaudry Upright Compact Power Hammer.
B33 15 ton capacity Metalwood Hydro Pneumatic Press.
No. 22 Rock River Splitting Shear, ½" capacity.
250 lb. Morgan Steam Hammer.
2"x24" J. & L. Flat Turret Lathe, with tools.

Partial list. 150 other tools in stock.

W. P. LITTLE CO.

West 9th & Front Sts. Cleveland, Ohio

Lowest Prices!

and The World's Greatest Stock!

LATHES

48"x40' Pond h. d., triple geared.
42"x22' American geared head, q. c.
36"x30' American geared head, q. c.
36"x20' Niles h. d. triple geared.
36"x12' Bridgeford grd. hd., q. c.
21"x12' LeBlond h. d., q. c.
20"x10' Davis, h. d., q. c.
16"x10' Hendey q. c.
16"x 8' Springfield q. c.
19"x10' LeBlond q. c. production.

MILLERS

No. 3 Brown & Sharpe vertical.
No. 5-C Becker vertical.
No. 5-D Becker vertical.
No. 1 Newton vertical.
No. 7-H Becker Lincoln type.
No. 2½ Hendey Lincoln type.
No. 2A Milwaukee plain.
No. 3 Milwaukee plain.
No. 21 Garvin plain.
No. 20 Oesterlein plain.
No. 25 Oesterlein universal.
No. 29 Oesterlein universal.
24"x24"x12' Ingersoll horiz. slab.

GRINDERS

16"x66" Landis universal.
10"x48" Landis universal.
16"x36" Landis universal.
16"x68" Landis crankshaft.
12"x36" Fitchburg cylindrical.
No. 60 Heald cylinder.
No. 2 Gisholt universal tool.
Yankee drill grinder.
No. 3 Diamond wet tool.

PRESSES

No. E-57 Ferracute 2½" stroke.
No. 58 Toledo, double geared, 4" str.
No. 75½ Bliss trimming.
No. 4 Pratt & Whitney trimming.
No. 5 Crosby Stiles type.
No. 6 American Can inclinable.
No. 4 R. & K. inclinable.
No. 2 L. & A. Style A forming press 12'—100 ton pressure.

PLANERS

60"x60"x18' Pond 2-heads.
48"x48"x18' New Haven 1-head.
48"x48"x 8' Sellers 1-head.
30"x30"x 6' Gray 1-head.
24"x24"x 8' Gleason 1-head.
22"x22"x 5' Gray, 1-head.
F2 Newton planer centers.
F1 Newton Planer centers.

SHEARS

30" M. & H. guillotine, cap. 6"x6".
48" Lewis gate, cap. 1¼".
6' Lennox rotary, cap. ¾".
30" Bethlehem rotary, cap. ¼".
24" thrt. Morgan dbl. end, cap. 1".
No. 7 United alligator, cap. 6"x6".
No. 2 Carlin alligator, cap. 5"x5".

HAMMERS

6000 lb. Chambersburg d. f. steam.
4000 lb. Niles d. f. steam.
2500 lb. Chambersburg d. f. steam.
2000 lb. Chambersburg d. f. steam.
4000 lb. Niles s. f. steam.
1500 lb. Niles s. f. steam.
800 lb. Niles s. f. steam.
3000 lb. Bliss board drop.
2500 lb. Bliss board drop.
2000 lb. Bliss board drop.
1000 lb. Union board drop.
800 lb. Union board drop.
400 lb. P. & W. board drop.
80 lb. Bradley helve cushion.

MISCELLANEOUS

No. 7 Ajax bulldozer.
No. 6 Ajax bulldozer.
No. 4-B W. & W. bulldozer.
2" National d. h. bolt cutter.
6" Bignall & Keeler pipe mchc.
1" National washer machine.
2" National washer machine.
66" Allen air riveter.
No. 4 Langelein swaging.
10 ton Morgan electric crane, 73'.
10 ton Shaw electric crane 65'.
5 ton Whiting electric crane, 35'.

Machinery Bulletin No. 210, describing our complete stock, mailed free on request.

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1—Becker No. 7 duplex.
1—Hendey No. 2G universal.
3—Cincinnati Nos. 1½ & 2 Universal.
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4—Briggs "B" plain miller.
1—Briggs type "A" manufacturing.
2—Rockford No. 1½, No. 2.
1—Rockford No. 2½ universal.
4—Cinti. Nos. 2, 3 & 4 pl., cone dr.
1—B. & S. Nos. 2, 2B, 3B, 4 plain.
1—B. & S. No. 13-B plain.
11—Becker Nos. 4B, 2B, 5C, C vert.
9—P. & W. 4½x12, 6x48, 6x80 thread.
4—Lees Bradner Nos. 4, 6 thread.
25—P. & W. No. 5 auto.
30—P. & W. No. 4 spline.

GEAR CUTTERS
1—Brown & Sharpe No. 13-H.
7—B & S. 3x36, 3x26, 4x36.
3—G. & E. No. 18-H.
20—Fellows Nos. 6, 61, 615.
20—Gleason bevel, 6", 11", 18".
5—Barber-Colman No. 3.

BORING MILLS
1—Baush 42" vertical.
1—Bullard 24" New Era type.
1—Colburn 54", 2 swivel heads.
1—Niles 42" vertical.
1—Ridgeway 84" vertical, 2 heads.

SCREW MACHINES—Automatic
16—B. & S. Nos. 0, 2, 2G full auto.
14—Gridley 4-spindle ⅞", 1⅛", 1¼", 7/16", 2⅛".
2—Gridley 4⅛", 3½" s. s.
3—Cleveland ⅜"-¾", ⅞", 1⅛", 2", 2⅛", 7⅛" "A".
1—Cleveland ⅝-⅞", ⅞", 1⅛" "B".
1—New Britain 1⅛x7, 1x7 bar.
9—New Britain No. 24, 33.
2—National Acme Nos. 52, 54.

DRILLS—Multiple Spindle
1—Natco No. 11.
1—Natco No. 14.
2—Baush No. 2, 24-spindle.
1—Moline No. 5-D, 6-spindle.
12—P. & W. Nos. 11, 12, 13.

DRILLS—Upright and Radial
2—Colburn Nos. 2 and 4.
1—P. & W. No. 1 gun barrel
2—New Turner No. 3 vertical.
6—Baker No. 310 and 314.
6—Cincinnati 24" sliding head.
1—American 4' univ. radial.
1—Baush 6' radial.
1—Niles-Bement-Pond 96" Ridgeway, m. d. pl. rad.

GRINDERS
1—Queen City 14x72 plain.
7—Norton 6x32, 10x36, 18x96.
4—B. & S. No. 11, 10 plain.
4—Cincinnati No. 2, 12x36.
1—Springfield 12x12x48 vertical.
1—W. & M. No. 3 surface.
2—Landis 14x48; 16x48 crank.
1—Fitchburg 12x54.
1—Cincinnati No. 2 universal.
11—Bryant No. 20 chucking.
2—Bryant No. 15, dbl. spindle.
28—Heald Nos. 65, 60 and 70.
1—Van Norman No. 34.

LATHES
4—Seneca Falls 12x6, q. c. g.
3—Davis 12"x5', q. c. g.
5—American 14x6, 16x8, s. p. d.
1—Hendey 16x8.
10—New South Bend 15x5, 18x8 gap.
2—Mueller 18x8, q. c. g.
3—LeBlond 26x10 duplex crank.
1—Bridgeford 26x12', q. c. g.
1—Greaves-Klusman 28x10.
1—Johnson 30x12, motor drive.
1—Bridgeford 32x26', geared head., s. p. d. or m. d.
1—Bridgeford 42x38', hvy. duty, grd. hd., dbl. carriage, arr. for m. d.
2—LoSwing 3½x84, 2 car. New Star Lathes, all sizes, with all att.

PLANERS
1—W. & P. 24x24x5, 1 head.
7—Putnam 26x26x 8', 2 heads.
1—Gray 38x38x20', 3 heads.
1—Gray (Cin.) 36x36x10', 3 heads.
1—Gray 36x36x10', 4 heads.
1—Putnam 48x48x12', 2 heads.

SHAPERS AND SLOTTERS
1—Columbia 28".
3—Dill 15-18" slotters.
2—Stockbridge 16", 24".
2—Smith & Mills 16", 20".

MISCELLANEOUS
1—Keyseater, Baker.
1—Niles-Bement-P. 10' plate roll.
1—Swage, Aetna No. 5-A.

25—HENDEY 12"x5' and 6' Q. C. G. Lathes
6—CINCINNATI 24" sliding head Drill Presses
5—BRIDGEFORD 42"x35' geared head Lathes

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LATHES

1—56"-64"x18' Johnson.
2—36"x30' Pittsburgh Geared Hd.
1—30"-34"x12 L. & S. Sel. Hd.
1—28"x16' Bridgeford.
21—26"x10' Canada.
12—25"x12' LeBlond.
1—24"x20' Reed-Prentice, Grd. Hd.
1—24"x12' Reed Prentice Grd. Hd.
9—24"x11' Cisco.
2—21"x10' LeBiond.
1—20"x 8' LeBlond.
1—18"x14' Reed-Prentice Grd. Hd.
1—18"x10' American Grd. Hd.
1—16"x 8' American Geared Head.
1—16"x 8' Monarch.
2—14"x 8' Pratt & Whitney.

MILLERS

1—No. 6 Becker Vertical.
1—No. 5-C Becker Vertical.
5—No. 3 Brown & Sharpe Vert.
1—No. 2B Milwaukee Vertical.
1—No. 4 Cincinnati, s. p. d.
1—No. 2 Cincinnati. s. p. d.
1—No. 2 Rockford, s. p. d.
3—No. 2 Kempsmith.
3—No. 3 Kempsmith Plain.
2—No. 3 Kempsmith Universal.

PLANERS

1—60"x48"x30' Hamilton.
1—42"x42"x22' Niles-Bement-Pond.
3—36"x36"x18' Cincinnati.
1—36"x36"x12' Woodward & P.
1—36"x36"x12' Gray.
1—30"x30"x14' N. B. P.
1—30"x30"x 8' N. B. P.

SHAPERS

1—32" Cincinnati.
1—24" Ohio.
1—16" Gould & Eberhardt, m. d.

PRESSES

1—96-G Toledo Dble. Crank, 148" between housings.
2—No. 56 Ferracute.

BORING MILLS—Vertical

4—72" Gisholt.
1—24" Bullard Rapid Production.

BORING MILLS—Horizontal

1—No. 3A Universal.
1—No. 0 Giddings & Lewis.
1—No. 1½ Beaman & Smith.
5—No. 1 Barrett.
6—2" Bar Rockford.

DRILL PRESSES

1—No. 30 Natco.
1—28" Rockford.
1—28" Cincinnati-Bickford.
1—No 513 Baker.
1—No. 24 Foote-Burt.
2—No. 25 Foote-Burt.
1—6-spindle Sipp.

SLAB MILLERS.

6—24"x24"x12' Ingersoll.
1—24"x24"x 8' Ingersoll.
1—24"x13"x20' Ingersoll.
1—32"x32"x12' Ingersoll.

GRINDERS

4—22" P. & W. Vert. Surf.
1—20"x96" Landis.
3—14"x50" Norton.
3—10"x72" Norton.
3—10"x36" Norton.
6—6"x32" Norton.
2—10"x24" Norton.
1—No. 70 Heald.

Our Guarantee: Your money back if you return a machine within thirty days, freight prepaid.

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REAL BARGAINS

No. 3 Walsh Punch Press, o. b. i.	$ 340.
2 No. 2½ Toledo o. b. i. Punch Presses, like new, each	275.
No. 10 Torris & Wold o. b. i. Punch Press	190.
No 19 Bliss Punch Press, o. b. i.	185.
La Pointe Broaching Machine No. 3, with broaches	275.
Edlund Drill Press, No. 2B, high speed b. b.	250.
Allen 3-spindle, 16" Drill Press, high speed b. b. 2-spindles equipped with automatic feeds	400.
"Ohio" tool and cutter Grinder No. 2, with all attachments	260.
Allen Single Spindle 14" Drill Press, high speed b. b.	175.
No. 3 Kempsmith Universal Milling Machine, complete with dividing head and tail stock, vise, graduated rotary table, vertical attach., 4 arbors, offset boring chuck, arbor support, dbl. friction c. s. 95% new.	1750.
American Quick Change Lathe, 20x10, taper attachment	1200.
Rahn-Larmon Quick Change Lathe, 18x8, complete	550.
16" Cincinnati, back geared Shaper, complete with vise & c. s.	350.
16" Barker geared crank Shaper, complete with vise and c. s.	250.
2-spindle Avey high speed, ball bearing Drill Press, motor driven, with attachment for 1 head, size ½	275.
Avey high speed Drill Press, bench type, size ½	85.
22" Barnes, camel back Drill Press	145.
H. B. Townsend, high speed Riveter, ⅛" capacity	125.

Send for our complete catalog of machine tools and motors

Midland Equipment Co., 612 W. Van Buren St., CHICAGO, ILL.

MUST BE SOLD SACRIFICE PRICES

16" COX Pipe Machine.
12" JARECKI Pipe Machine.
10" E. C. B. Pipe Machine.
6" JARECKI Pipe Machine.
4" JARECKI Pipe Machine.
2" NATIONAL Bolt Cutter.
1½" LANDIS Bolt Cutter
1½" ACME Bolt Cutter M. D.
24" STOCKBRIDGE Shaper M. D.
16" STOCKBRIDGE Shaper.
24" GISHOLT MOTOR DRIVE.
24" STEINLE Belt or Motor.
76" BETTS Vertical Boring Mill.
76" BULLARD Vertical Boring Mill.
61" BULLARD Vertical Boring Mill.
42" BULLARD Vertical Boring Mill.
No. 4 CINCINNATI Vertical Miller.
6' BICKFORD Radial Drill M. D.
44"x22' NILES-BEMENT-POND Lathe, motor drive.
42"x30' POND OF PLAINFIELD Lathe.
No. 5 BROWN & SHARPE Plain Miller.

Ask for prices. Can be inspected at

Bertolette Machine Tool Company, Incorporated

222 Culver Ave., Jersey City, N. J.

Good Tools — Priced Low

DRILL PRESSES

20" Silver plain	$ 40.
20" Kokomo sliding head, back gears, power feed	175.
24" Prentice sliding head, back gears, power feed	125.
14" Allen 2-spindle sensitive	150.
14" Allen 3-spindle sensitive	200.
Radial 3' American sensitive	250.

GRINDERS all types in stock.

LATHES

14"x6' Monarch, q. c. g., taper att., chk. and standard equip.	$350.
14"x8' LeBlond hvy. duty, q.c.g., pan bed, taper att., two chks.	450.
16"x6' Reed-P., taper att., pan bed, change gears, std. equip.	250.
16"x6' Reed, standard equip.	100.
16"x6' Reed, taper attachment	125.
18"x8' Barnes, standard equip.	225.
18"x8' LeBlond production	275.
18"x6' Hamilton, q.c.g., pan bed	225.

MILLING MACHINES

Cincinnati No. 1½ plain	$350.
Brown & Sharpe No. 3 plain	250.
Davis plain, table 6"x36"	150.
Grand Rapids pl., table 8"x44"	125.
Briggs "A" plain	100.
Toledo hand, ball bearing	100.
Standard hand No. 1	100.
Garvin No. 13 plain	75.

MISCELLANEOUS

Blowers, pres. No. 5 Am. Gas	$350.
Blowers, pres., Spencer 2000 c. f. m. 15 h. p., a. c. mtr. atch.	700.
Blue print. mche. Pease vert	200.
Shaper, 20" Smith & Mills, b.g.	450.
Screw Mche., No 2 W. & S.	300.
Screw Machine, No. 2 Foster	150.
Sq. shr., No. 152 Nia. 53" wide	300.
Punch Press, No. 3 Rockford	275.
Disc Grinder, No. 2 Gardner, b.b.	300.
Broaching mch., No. 2 LaPointe	125.
Broaching Mch., No. 3A LaP.	175.
High Spd. Ham. No. 2 nearly new	150.

Haskell Machinery Company

414 E. Woodbridge St., Detroit, Michigan

GUARANTEED TOOLS

DRILLS

24" Hoefer, sliding head.
26" Aurora, sliding head.
26" Prentice, sliding hd., sgl. pulley dr.
36" Mueller plain radial, cone drive.
36" Dreses plain radial, cone or m. d.
42" Fosdick pl. radial, g. b., s. p. d.
48" Western plain radial, gear box or motor drive, (3).

LATHES

12"x4' Hendey geared head, motor driven, serial No. 16888.
14"x6' Hendey tie bar, taper attach.
16"x10' P. & W. grd. hd., motor dr.
18"x8' Prentice geared hd., motor dr., taper attachment, pan bed.
18"x10' Prentice geared head, motor driven, taper attach., pan bed.
18"x12' Lodge & Shipley, q. c., taper attach., draw-in chuck, pan bed.
20"x8' Monarch, d. b. g., q. c., taper attachment.

MILLERS

Model B Becker vert., single pulley dr.
No. 3 Hendey plain.
No. 3 Cincinnati plain.
No. 4 Cincinnati universal.

PIPE MACHINES

2" No. 300-A Oster, belt driven.
4" No. 304-A Oster, belt driven.
4" No. 304-B Oster, motor driven.
6" Eaton, Cole & Burnham, belt dr.

HEAVY DUTY GRINDERS—Motor Driven

7½ h. p. Bridgeport, ball bearing, with General Electric 3 ph., 60 cy., 220 or 440 v. motor with guards and tool rest; takes wheels, 20" dia., 3" face.
10 h. p. Bridgeport, ball bearing, with General Electric 3 ph., 60 cy., 220 or 440 volt motor; with guards and tool rest; takes wheels 24" dia., 3" face.

Delta Equipment Co., 148 N. 3rd Street, Philadelphia, Pa.

"Semco" Used Machinery

Boring Mill, Detrick & H. 42" vert.
Boring Mill, Gisholt 36" vertical.
Broaching Machine, No. 3 LaPointe.
Drill, Moline No. 8-D, 10' rail; 26 No. 14 style D hds., 99% new, $1500.
Drill, Moline No. 7-D, with 4 No. 36 heads, 95% new, $1000.
Drill, Pecorp model F, ball bearing.
Engraving Machine, Keller No. E-3, 90% new, $1000.
Grinder, Landis 10x72" plain.
Lathe, Bradford 18"x8'.
Lathe, Seneca Falls 15"x6'.
Lathe, Porter-Cable 9x20".
Lathe, American 14"x6'.
Milling Machine, LeBlond No. 0½.
Milling Machine, Becker No. 5C.
Milling Mche., B. & S. No. 3 vertical.
Milling Machine, National No. 0.
Milling Machine, Van Norman No. 1.
Planer, Hendey 16"x4'.
Press, Bliss-Con. No. 166½, grd.
Press, power, Toledo No. 56 geared.
Press, Toledo No. 56, str. side grd.
Press, Toledo No. 93A, str. side grd.
Press, punch, Toledo No. 5, o.b.i. (2).
Press, punch, Toledo No. 6, o. b. i.
Press, toggle drawing, Bliss No. 1½.
Punch & Shear, Wais No. 2 univ.
Saw, Cordesman 36", band.
Saw, Cochrane-Bly No. 4B, cold.
Threading Machine, Webster & Perks 4-spindle.

The Seifreat-Elstad Machinery Company

Storeroom—Dayton, Ohio

Cincinnati, Columbus

LATHES: Five 36"x16' Niles-Bement-Pond Screw Cutting Lathes, quick change gears, geared head with motor mounted on head.
One 24"x12' American, geared head.

TURRETS: Four 24" Gisholt Turrets, 6¼" hole in spindle.
One No. 5A Potter & Johnston Automatic, high serial.
One Foster No. 1B Universal Turret Lathe.

DRILLS: Two 4-spindle 23" Rockford Drill Presses, alternate spindles sliding heads, size of table 22"x86".
One 4-spindle Leland-Gifford H. S. Sensitive, 14", with power feed to spindles.
Two 42" Cincinnati Upright, b. g., p. f., gear box dr.
One 5-spindle Allen High Speed Drill.

GRINDERS: Two 6"x30" Norton Plain Grinders.
One 14"x72" Norton Plain Grinders.
One No. 2 Cincinnati Plain Grinder.
One 14" P. & W. Vert. Surf. Grinder with mag. chuck.

SHAPERS: One 26" Smith & Mills Shaper, B. G.
Several 14", 16" & 20" Gould & Eberhart.
One 24" Potter & Johnston Shaper, Universal Table.

MISCELLANEOUS: One 6"x48" Pratt & Whitney Thread Miller.
One 8' Ohl Power Squaring Shear, capacity 16 gauge.
One No. 55 National Acme Automatic (good as new).
One No. 2 Garvin Auto. Tapping Machine.
One Fischer Oil Groover.
One No. 2 Brown & Sharpe Vertical Miller.
Other High Grade Equipment.

Morris Machinery Company, Inc., 93-115 Chestnut St., Newark, N. J.

Honestly Rebuilt Machinery

BORING MILLS

24" Bullard Vertical Turret Lathe.
36" Bullard Vertical Turret Lathe.
42" Bullard Two Head Vertical Boring Mill.
No. 1 Lucas Horiz. Boring Mill.

GRINDERS

6"x32" Norton Plain.
10"x18" Norton Plain.
10"x80" Norton Plain.
No. 60 Heald Cylinder.
No. 65 Heald Cylinder.
No. 2 Brown & Sharpe Surface.
24"x144" Landis Plain.

LATHES

14"x6' Hendey Yokehead.
16"x8' Hendey Yokehead.
18"x10' Hendey.
32"x12' Bridgeford.

MILLERS

No. 12 Brown & Sharpe Mfg.
No. 2 Brown & Sharpe Plain.
8" Pratt & Whitney Automatic.
No. 1½" Hendey Norton Univ.

SCREW MACHINES

No. 0 B & S Automatic, serial 5000.
No. 00 B & S Automatic, seri. 8900.
No. 515 National Acme Auto.
No. 23 New Britain Auto. Chucking.
No. 24 New Britain Auto. Chucking.
No. 33 New Britain Auto. Chucking.

MISCELLANEOUS

Waterbury Eyelet Machines.
No. 2 Campbell Nibbler.
96" Niagara Shear.

J. L. Lucas & Son, Inc., 3 FOX ST., Bridgeport, Conn.

We Look Beyond the Initial Transaction

Bolt Cutter, 2" Landis Double Head.
Bolt Cutter, 4" Landis, Single Head.
Bolt Pointing Machine, 1" Acme.
Boring, Drilling and Milling Machine, No. 0 Fosdick Horizontal.
Slate Marking Machine, No. 11 Dwight.
Bulldozer, No. 6 Ajax.
Brake, 8', 14 Ga. Dreis & Krump Power Bending.
Tapping Machine, No. 2X Garvin Automatic.
Squaring Shear, No. 336 Niagara, 36" Power, No. 10 Ga. Cap.
Shaper, 18" Barker Back Geared Crank.
Hack Saw, 6"x6" Peerless High Speed, Power.
Riveting Hammer, No. 3A High Speed, Heavy Duty.
Press, No. 21B Bliss, O. B. I., 2½" stroke.
Planer, No. 3 Niles, 16' Plate.
Thread Miller, 6"x80" Pratt & Whitney.
Miller, No. 3B Brown & Sharpe, Heavy, Plain.
Hammer, No. 12 Beaudry 500 lb. Champion, Power.
Grinder, 16"x72" Landis Plain Self-Contained, Motor Driven.
Grinder, No. 12 Brown & Sharpe cylindrical, 8" swing 36" between centers.
Gear Cutter, 30"x10"x4 Pitch Flather Automatic.

THE E. L. ESSLEY · MACHINERY · CO

551 W. Washington Blvd., Chicago. 78-80 W. Water St., Milwaukee

BORING MILLS

Sacrifice Before Removal

14' Niles Vertical Boring & Turning Mill, Two swivel heads on cross-rail, Geared Feeds, Table 168" dia. x12" thick, Motor Drive.
10' Niles Vertical Boring & Turning Mill, Two swivel heads on cross-rail, Table 118" dia. x8" thick, Motor Drive.
10' Pond Vertical Boring & Turning Mill, Two swivel heads on cross-rail, Table 96" dia. x7" thick, Motor Drive.
72" Gisholt Vertical Boring & Turning Mill. Two Swivel heads on cross-rail, Power Rapid Traverse, Table 70" dia. x7" thick, Motor Drive, Good as new, used less than two years.
54" Bullard Rapid Production Type Vertical Boring & Turning Mill, One swivel and one turret head on crossrail, Power Rapid Traverse, Table 52" dia. x6" thick, single pulley drive.
53" Niles-Bement-Pond Vertical Boring & Turning Mill, Two swivel heads on crossrail, Power Rapid Traverse, Table 52" dia. x7" thick, Motor Drive.
42" Bullard Vertical Boring & Turning Mill, Two swivel heads on cross-rail, Table 38" dia. x4" thick, single pulley drive.
No. 2 Beaman & Smith 5" bar Horizontal Floor Type Boring Mill.

We have just purchased the above machines, all of which can be inspected in operation. Condition guaranteed.

Sun Machinery Company, Inc.
39 Hamilton St., Newark, N. J.

Choice Tools

No. 3 Kempsmith Universal Milling Machine latest type complete with dividing head and tail stock, vise, graduated rotary tbl., vertical head attach, arbor support, 4 arbors, offset boring head, double friction countershaft, 95% new. Price	$1750.
Allen 3 spindle h. s., b. b. Drill press, two spindles equipped with power feeds	400.
Allen 1 spindle h. s. b. b. Drill press	175.
Edlund h. s. b. b. Drill press No. 2B, 18"	250.
American Lathe, 20"x10' quick change gears dble. back geared taper attach., chucks, face plates, rests, & countershaft, price	1200.
Rahn-Larmon Lathe 18"x8' quick change gears, back geared chucks, face plates, rests and countershaft	550.
LaPointe No. 3 Broach, (Hudson) t. & l. pulley drive, 6 broaches	275.
Worcester 12" back geared shaper, vise and c. s.	300.
Ohio No. 2 tool and cutter grinder, all attachments	250.
No. 2½ Toledo o. b. i. punch press 2" stroke	275.
High speed riveting hammer No. 5A motor bracket, switch boxes	200.

GEORGE M. BERNSTEIN & CO.
549 W. Washington Blvd., Chicago, Ill.

Long Distance Telephone Franklin 4026

Motors—Direct Current—550 Volt

Having changed our mill power from Direct Current to Alternating, we have for sale the following motors which were abandoned, but which were all in good operating condition at the time of their removal last Spring:

NO.	H. P.	R. P. M.	MAKE	TYPE	PRICE
1	200	300	G. E.	MPC—G	$2000.
2	200	300	G. E.	MPC—G	2000.
3	30	1025	G. E.	CL—G	300.
7	15	1150	W. H.	S	50.
8	10	1050	Woods	ML	100.
11	10	900	G. E.	RC	150.
12	15	900	G. E.	RC	230.
13	40	975	G. E.	CL	300.
16	50	1150	Allis		400.
17	10	1250	G. E.		100.
20	5	1200	G. E.		35.
21	2½	1425	Fairb.		25.
23	75	775	W. H.	S	600.
24	8	1600	G. E.	MP.	40.

All prices include starting boxes, pulleys, and, in most cases, slide rails, and are F. O. B. Salina, Kans.

THE SHELLABARGER MILLS, Salina, Kans.

WAYNE Greater Values

10"x 4' Seneca Falls Lathe, pan bed	$ 90.
10"x 4' Seneca Falls Lathe, motor driven	175.
11"x 6' Myers Lathe	125.
14"x 6' Sidney Lathe, q. c., 3-step cone, double back gear	250.
16"x 6' Flather	75.
16"x 9' Chard Lathe, q. c., 3-step cone, double back gear	425.
16"x 6' Pratt & Whitney Geared Head, taper	600.
24"x12' Pond Heavy, quick change	500.
24"x12' Carroll-Jamieson, 3-step cone, semi-quick change	400.
26"x12' Lodge & Davis 5-step cone, taper	500.
3' American Radial, cone drive	475.
4' Bickford, single pulley, gear box	650.
Davis & Egan Universal Miller	350.
No. 3 Kempsmith Plain Miller. Late type, 95% new	750.
No. 3 Brown & Sharpe Universal, complete	1000.
16" American Crank Shaper	400.
24" Gould & Eberhardt, geared crank	750.
24" Walcott Geared Crank	875.
No. 3 Adams-Farwell Gear Hobber	500.
10' Niles Heavy, Vertical Boring Mill	3500.
42" Throat Lenox Splitting Shear, ⅜" capacity	600.

WAYNE MACHINERY CO., Fort Wayne, Indiana

NEW and USED
SPECIAL PRICES

Planers.
36x36x10 Gray, 2 heads.
30x30x8 Liberty, 2 heads.
24x24x24 Cincinnati Crank.

Milling Machines
Becker Model C. Vertical.
Becker No. 5B, Vertical.
Cincinnati No. 2, Vertical.
Cincinnati No. 3, Vertical.
Kempsmith No. 3 Plain.
Kempsmith No. 5 Plain.
Ohio No. 34 Plain.
Rockford No. 0 Plain.
Rockford No. 1 Hand.
Standard No. 0, 1, 1½ Hand.

Screw Machines
Foster Nos. 0, 1, 2, 3 & 7.

Turret Lathes.
W & S No. 2A Universal.
W & S No. 2 Fox.
W & S No. 3 Fox.

Miscellaneous
Universal Horiz. Boring, Drilling and Milling Machine, 2½" bar.
Beaman & Smith, Horizontal Boring Machine, 3" bar.
American No. 3 Broaching Machine rack type.
Harrington No. 61B Multiple Drill 15x24 rec. head, bored for 24 spd.
Hercules 8" Gear Hobber.
Reynolds 12" Gear Hobber.
Fellows No. 6 Gear Shaper.
Kelly 16" Shaper.

Large stock of Lathes, Drills, etc.

Stocker-Rumely-Wachs Company
117-121 N. Jefferson St., Chicago, Ill.

Power Presses and Squaring Shears
EXCLUSIVELY

EMBOSSING PRESSES
1—No. 27 Bliss, 1000 tons, K. J.
1—No. EG24 Ferracute, 150 tons K.J.
1—No. 45 Bliss, 200 tons, geared.

STRAIGHT SIDE PRESSES
1—No. 65 Cons., geared.
1—No. 67 Consolidated 6" stroke.
3—No. 57 Toledo, geared, tie rod.
1—No. 56 Toledo, geared.
2—No. DG 55 Ferracute, geared.
1—No. D301 Ferracute, 300 tons pressure.

TOGGLE PRESSES
1—No. 168½ Toledo, will draw 12½".
1—No. 3¾ A Bliss.
2—No. 1½ Bliss, friction clutch.

SQUARING SHEARS
1—Ohl, 10'x10 gauge cap.
1—Niagara 8'x7/16" cap., 16" gap.

DOUBLE CRANK PRESSES
1—No. 96½ Bliss grd., 48" bet. up.
1—No. 5 Bliss, geared, gap frame.
1—No. 4¾ Bliss, geared, gap frame.
1—No. 3A Bliss, grd., 36" bet. up.
1—No. 2 Bliss, flywheel, 28" bet. up.
1—No. S.G. 86 Ferracute, 64" bet. up.
1—SRG 102 Ferracute, 40" bet. up.
3—No. S51 Ferracute, 28" bet. up.
1—No. 4¾B Bliss, 38" geared.

SOLID BACK PRESSES
2—No. 5 Bliss, Stiles, geared.
1—No. 4 Bliss, Stiles, geared.
1—No. 4 Bliss, Stiles flywheel.
3—No. 23 V. & O. combination.

Inclinable and open back Presses, all makes and sizes.

Over 1200 Presses in Stock. ***Write for New Catalogue.***

Joseph HYMAN & Sons
Tioga and Almond Sts., Philadelphia, Pa.

Slightly Used and Rebuilt Tools

At Bargain Prices

1—No. 4 Colburn Single Spindle Mnfrs. Drill, with pump, capacity 2".
1—No. 310 Baker Bros. High Spd. Hvy. Duty Sgl. Spdl. Drills, rebuilt.
1—No. 2, Pfauter 39¼", cap. 2½ d. p., auto. Gear Hobbing Mch., 90% new.
1—16"x7' Hendey, cone type, tie bar head, q. c. g., oil pan, compound and taper.
1—14"x6' Hendey Cone Type Tie Bar Head, Q. C. Lathe, c. r., taper att.
1—14"x6' Mulliner-Edlund, Q. C. G. Lathe, oil pan, c. r., taper, complete, rebuilt.
1—3" Hendey Centering Machine.
1—No. 3-G Hendey Plain Milling Mche., geared spdl., sgl. pulley drive.
1—2¼" Milholland Latest Style Geared Friction Head Turret Screw Machine, automatic chuck, bar feed, power feed to turret, oil pan, pump, master collet and assorted bushings, 90% new.
1—1½" Acme Single Class-A Bolt Cutter, with Chasers.
1—100 lb. Little Giant Power Hammer.
1—No. 246E—Type C. N. E. Schatz Plate, Structural Steel and Miter Shear, Universal Punch and Coping Machine, motor driven; cap. plate shear, ¾"; rd., 1¾"; square, 1 5/16"; punch, 1 3/16" in ¾"; 90% new, made of Siemans-Martin Steel.

The W. M. Pattison Supply Co.

General Offices and Warehouse, Cleveland, Ohio

Partial List—Attractive Prices

AUTOMATIC CHUCKING MACHINES.

2—No. 6A Potter & Johnston.
2—No. 7A Potter & Johnston. All arranged for Motor Drive. Complete Equipment. Like New.

MILLING MACHINES

1—No. 2 B S Milwaukee plain, double over arm, nearly new.
1—No. 3 Cincinnati plain, single pulley drive
1—No. 2 Cincinnati pl., cone. dr.
6—No. 1 Milwaukee pl.,sgl.p.dr.
1—Model B Becker vertical.

PLANERS and SHAPERS

1—30"x30"x16' Gray planer, 3 heads, spiral gear drive.
1—20"x20"x5' Whitcomb planer, second belt drive, single head.
1—21" Smith & M. b. g. shaper.
1—16" Gould & E. shaper,bk.gr.
1—24" Hendey friction shaper.
1—16" Cincinnati bk.grd.shaper.
2—16" Whipp bk. geared shapers (brand new).

MISCELLANEOUS

1—No. 3 Barber-C. gear hobber.
1—No. 12 B. & S. plain grinder, capacity 8"x36", late type.
1—6"x80" P. & W. thread miller.
No. 10 Brown & Sharpe plain grinder, capacity 6"x20".
1—42" Bullard vertical boring mill, 2 swivel heads.
1—Lucas horiz. boring, milling and drilling machine, 3" bar, single pulley drive.
1—No. 4 Warner & S. tur. screw mche., 1½" bar cap., bar feed attachment, power feed to tur. and cut off slide, 14 collets.
1—No. 1 Brown & Sharpe Wire Feed Screw Machine.

We have 500 other machines in stock. If you do not see it listed, send us your inquiry.

New Jersey Machinery Exchange

4 Orange St., Newark, N. J.

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La Salle Grinders

For Precision and Production

No. 2 Automatic Surface Grinder

Grinds Work 20" Long, 6" Wide and 10" High With 7" Wheel

24" Table Extra

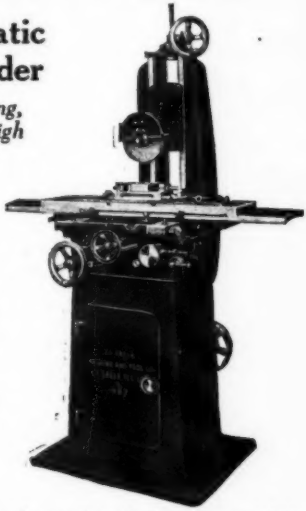

Table travels automatically in both directions. A hand-power table movement can be operated without changing automatic feed.

Also has automatic cross feed in either direction with automatic stop. Wheel turning device is built integral with machine.

You will find nothing better for grinding dies, punches and a wide range of small tools, as well as for many manufacturing jobs. Exceptionally rigid, it has ample provision for preserving perfect alignment. Arranged for either wet or dry grinding, with belt or direct motor drive.

La Salle Grinders include our No. 1 and No. 3 Plain and Surface Grinders; No. 2 Automatic Surface Grinder; and American Wet and Dry Drill Grinders in various sizes—each a real leader in its class. ***Write us for complete information concerning these modern Grinders, and consult with us freely about your needs.***

La Salle Tool Company

Ottawa, La Salle County, Illinois

Formerly of La Salle, Ill.

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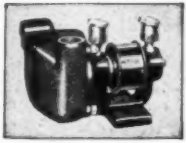

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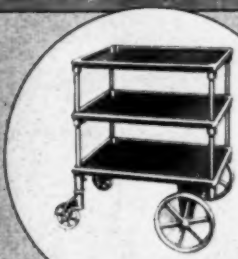

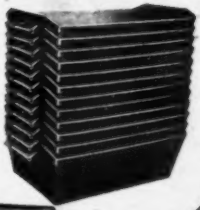

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